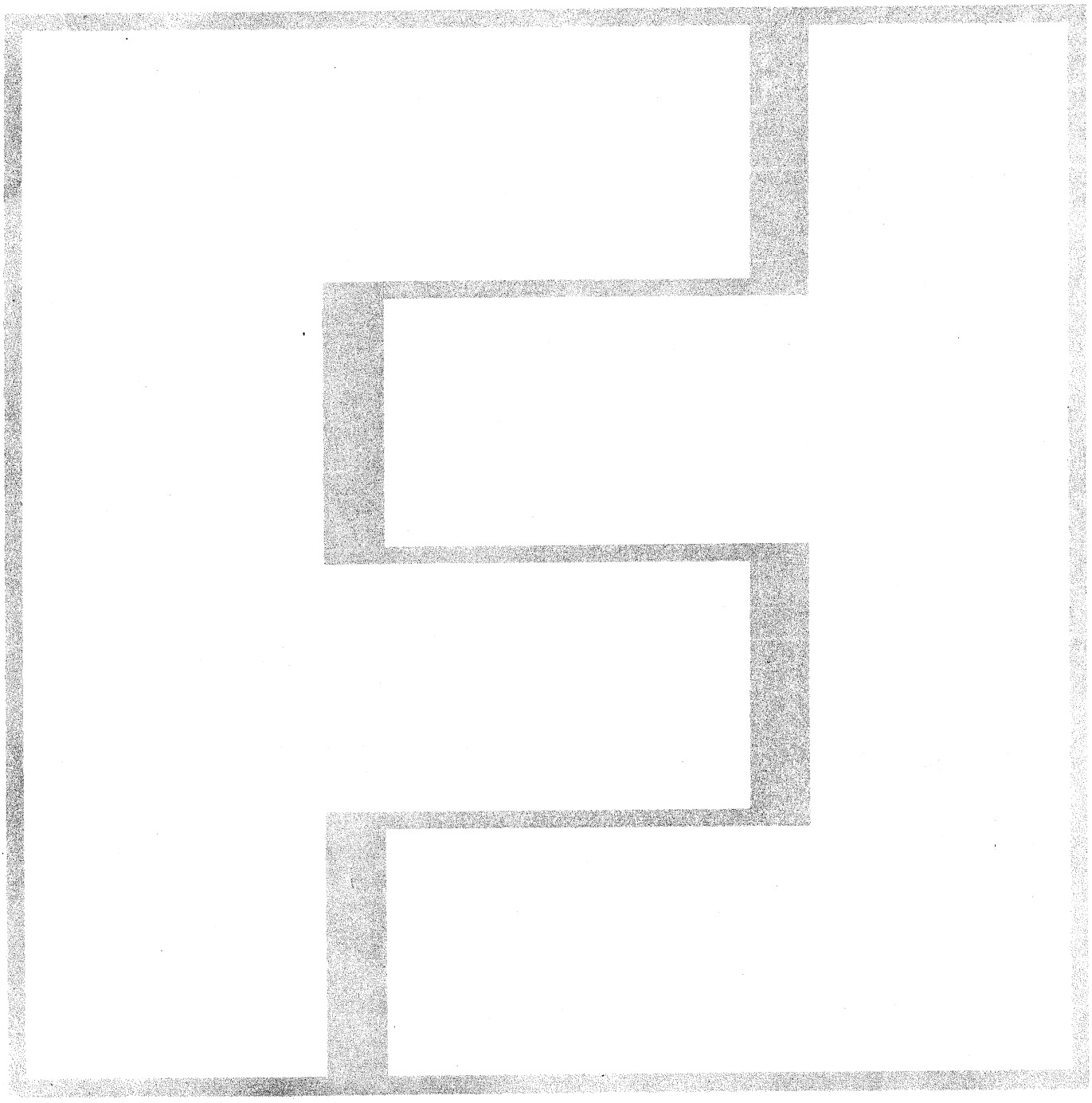

FARFISA ORGAN

PROFESSIONAL DUO SERVICE MANUAL

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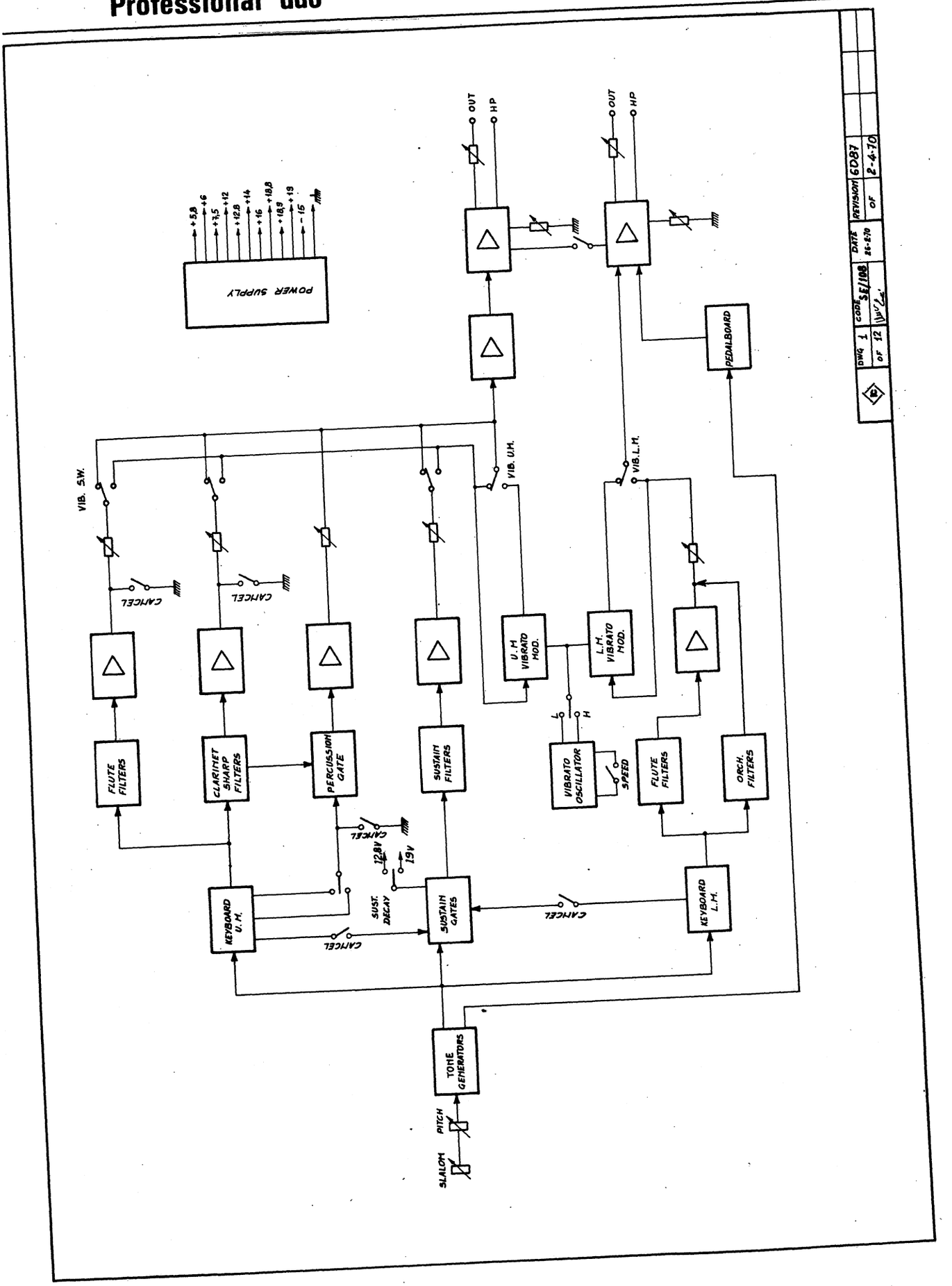
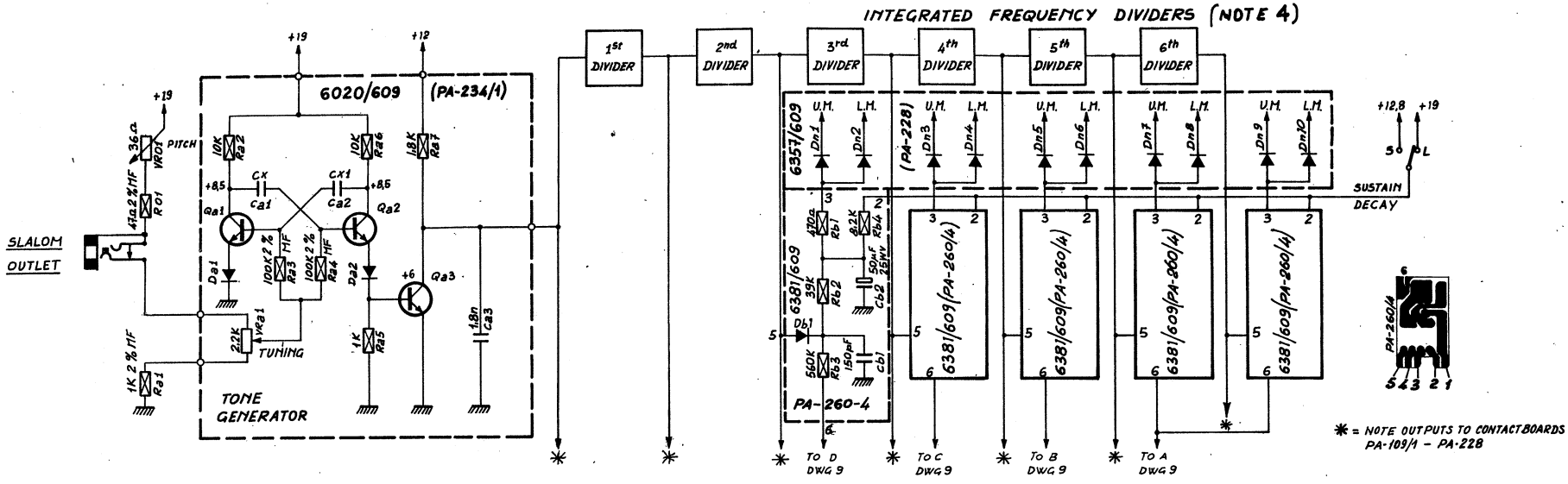
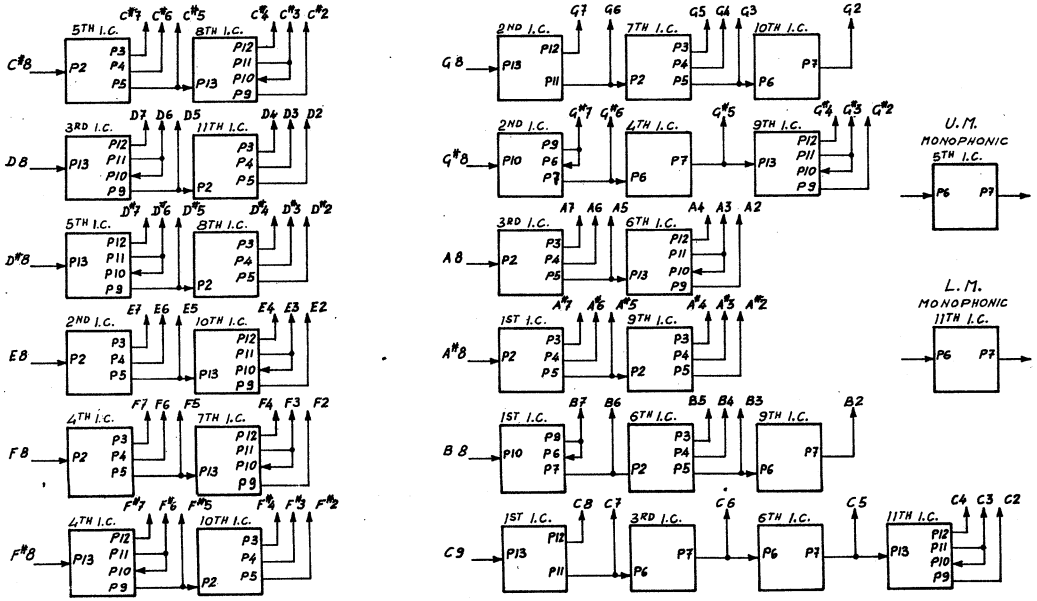
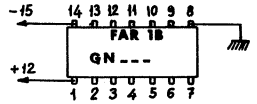

OUT
HP
OUT
HP
+5,8
+6
+7,5
+12
+12,8
+14
+16
+18,8
+18,9
+19
-15
POWER SUPPLY
PEDALBOARD
VIB. S.W.
VIB. U.M.
VIB. L.M.
CANCEL
CANCEL
CANCEL
CANCEL
CANCEL
CANCEL
U.M. VIBRATO MOD.
L.M. VIBRATO MOD.
L
H
FLUTE FILTERS
CLARINET SHARP FILTERS
PERCUSSION GATE
SUSTAIN FILTERS
VIBRATO OSCILLATOR
SPEED
FLUTE FILTERS
ORCH. FILTERS
12,8V
19V
SUST. DECAY
KEYBOARD U.M.
SUSTAIN GATES
KEYBOARD L.M.
TONE GENERATORS
PITCH
SLALOM
DWG 1 OF 12
CODE SE/108
DATE 26-8-70
REVISION 6087 OF 2-4-70
E



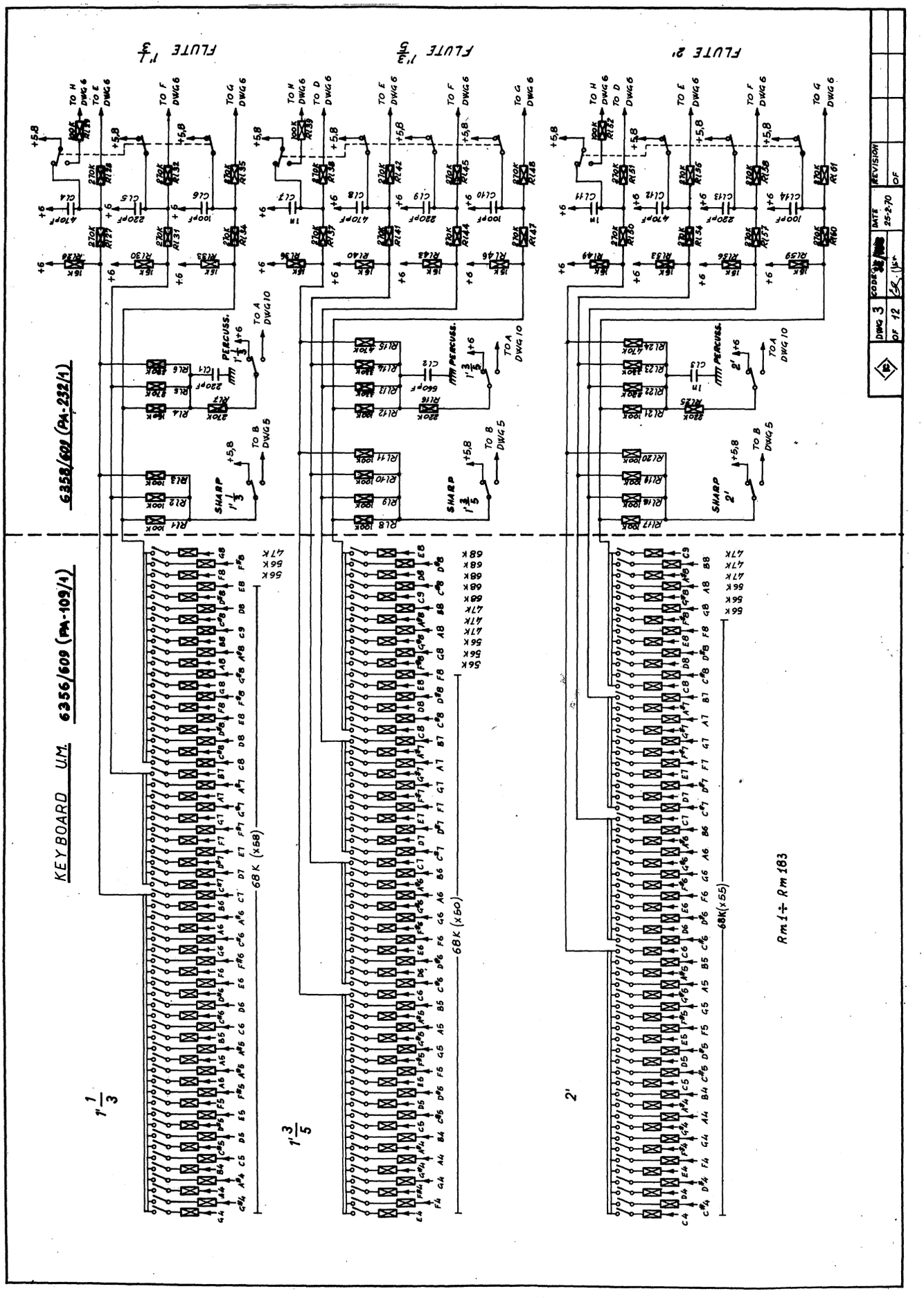


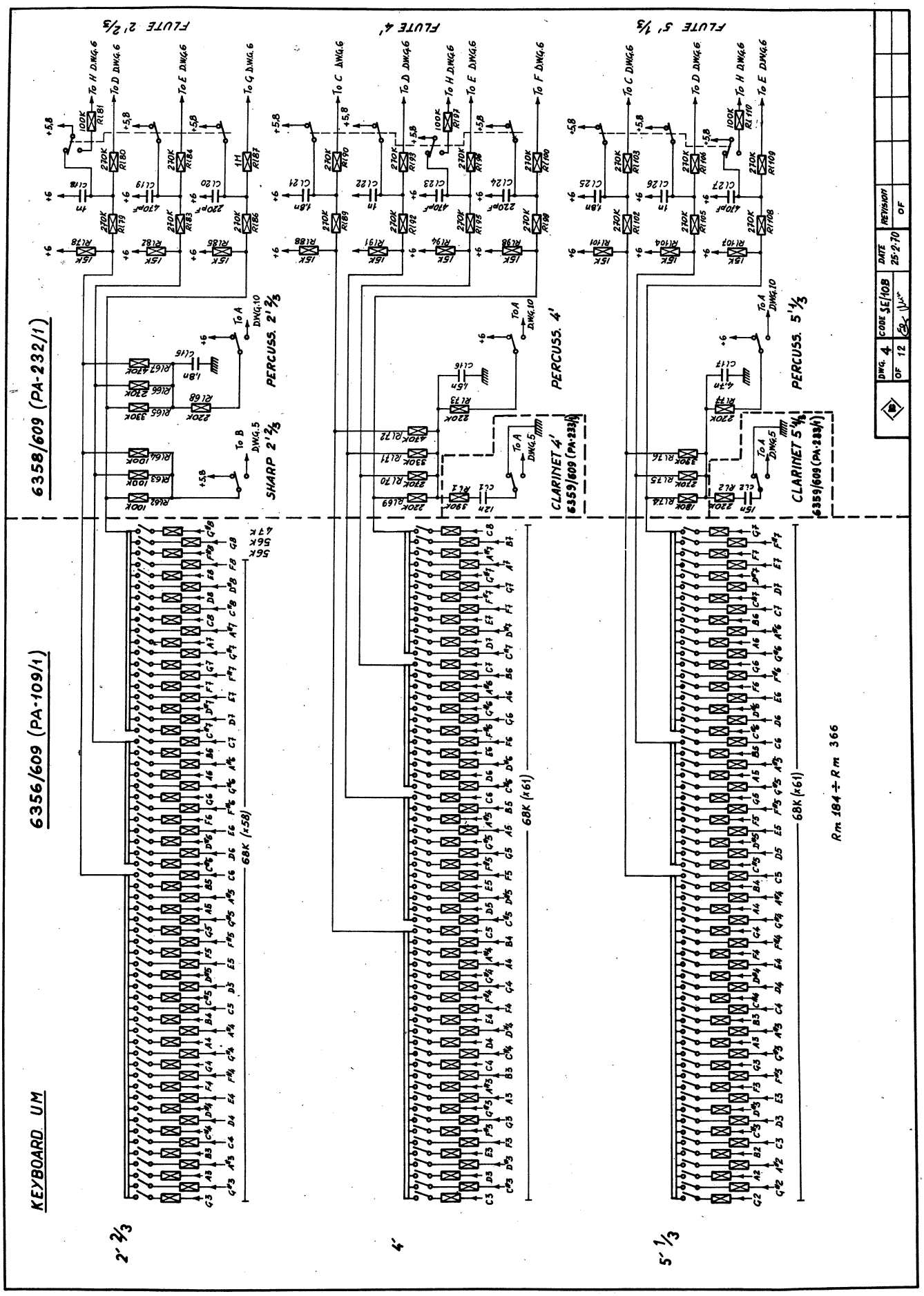
Note	Frequency Hz	Cx - Cx1 pF
Do#8 C#8	4435	1475
Re8 D8	4698	1395
Re#8 D#8	4978	1315
Mi8 E8	5274	1240
Fa8 F8	5588	1170
Fa#8 F#8	5920	1105
Sol8 G8	6272	1040
Sol#8 G#8	6644	985
La8 A8	7040	930
La#8 A#8	7458	875
Si8 B8	7902	825
Do9 C9	8372	780

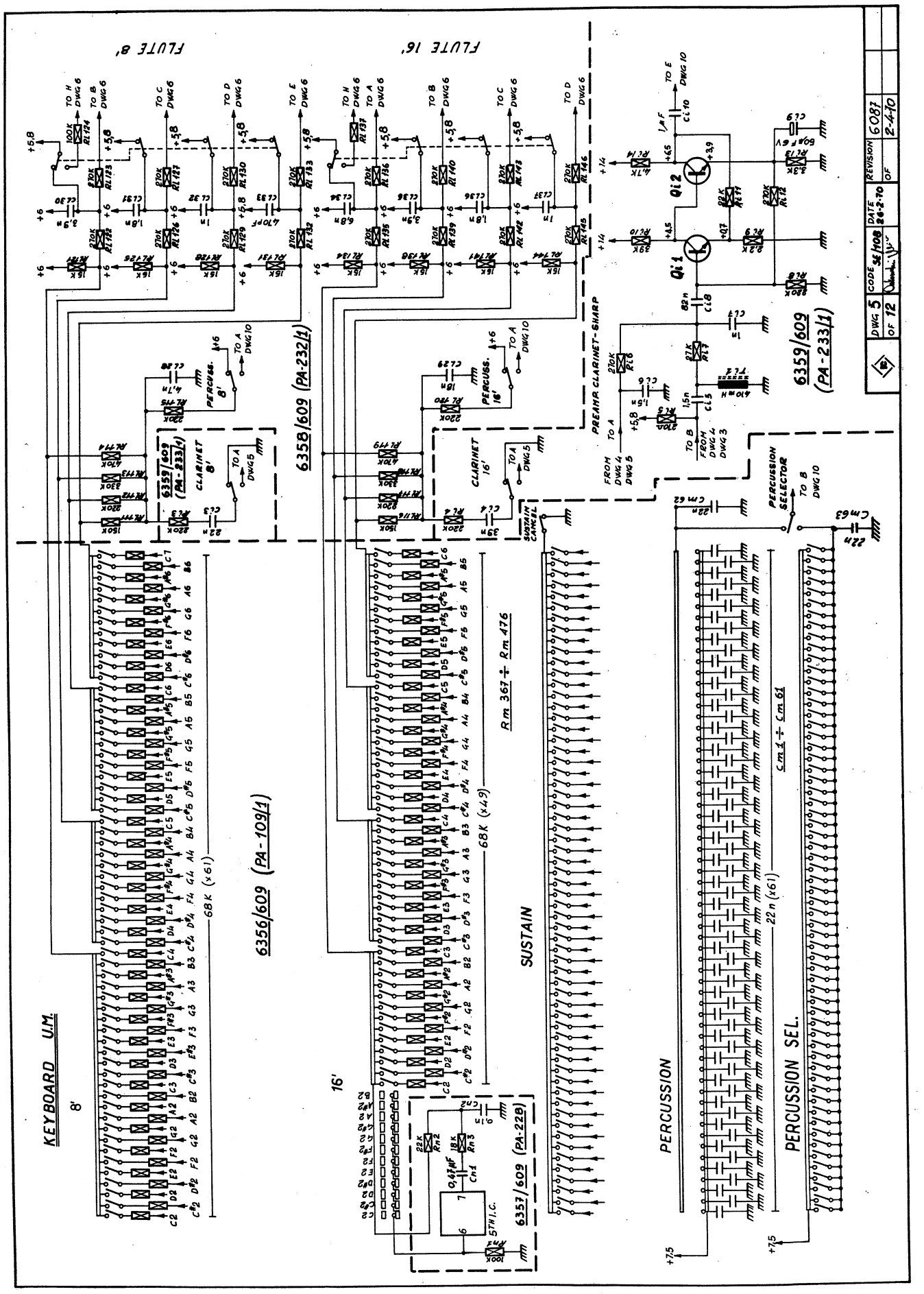
1) ALL RESISTORS 1/8W 10% UNLESS OTHERWISE SPECIFIED.
2) SEE PARTS LIST FOR COMPONENT PART NUMBERS.
3) MF = METAL FILM RESISTOR.
4) INDICATED CIRCUIT APPLIES ONLY TO NOTES C# THROUGH B, NOTE C HAS ONE MORE DIVIDER AND SUSTAIN GATE.



	DWG. 2 OF 12	CODE SE/108	DATE 25-2-70	REVISION OF	6087 2-4-70			


KEYBOARD U.M. 6356/609 (PA-109/4)
6358/602 (PA-232/4)
FLUTE 1'1/3
FLUTE 1'3/5
FLUTE 2'
1'1/3
1'3/5
2'
Rm 1÷Rm 183
DWG 3
OF 12
DATE 25-2-70
REVISION
OF


KEYBOARD UM
6356/609 (PA-109/1)
6358/609 (PA-232/1)
6359/609 (PA-233/1)
6359/609 (PA-288/1)
FLUTE 2' 2/3
FLUTE 4'
FLUTE 5' 1/3
PERCUSS. 2' 2/3
PERCUSS. 4'
PERCUSS. 5' 1/3
SHARP 2' 2/3
CLARINET 4'
CLARINET 5' 1/3
2' 2/3
4'
5' 1/3
68K (x61)
68K (x58)
Rm 184 ÷ Rm 366
DWG. 4
CODE SE/108
DATE 25-2-10
REVISION
OF 12
OF


KEYBOARD U.M.
8'
16'
6356/609 (PA-109/1)
6358/609 (PA-232/1)
6359/609 (PA-233/1)
6357/609 (PA-228)
SUSTAIN
PERCUSSION
PERCUSSION SEL.
PREAMP CLARINET-SHARP
FLUTE 8'
FLUTE 16'
CLARINET 8'
CLARINET 16'
PERCUSS. 8'
PERCUSS. 16'
PERCUSSION SELECTOR
68K (x61)
68K (x49)
Rm 367 ÷ Rm 476
Cm 1 ÷ Cm 61
22n (x61)
DWG 5 OF 12
CODE SE/108
DATE 26-2-70
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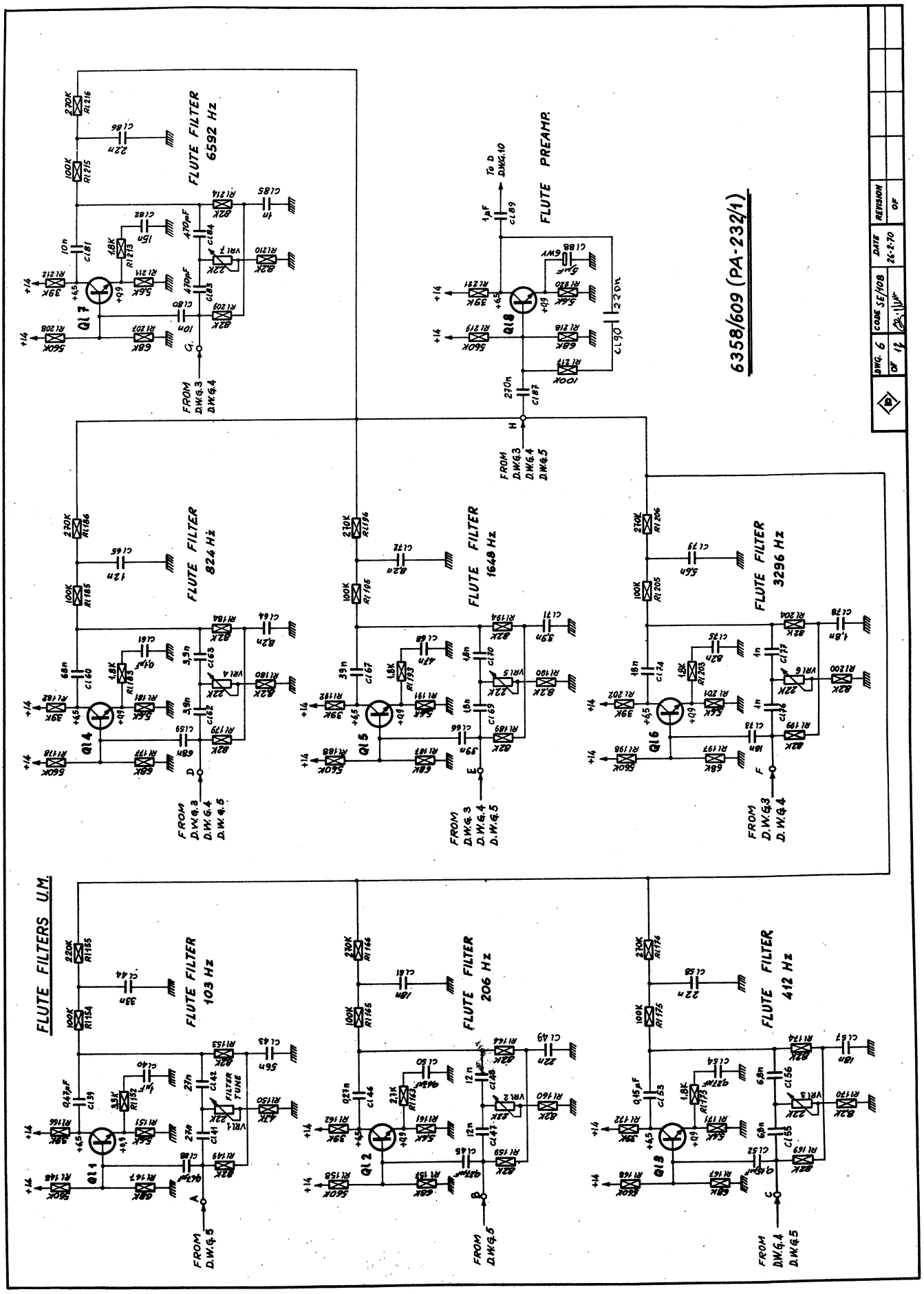
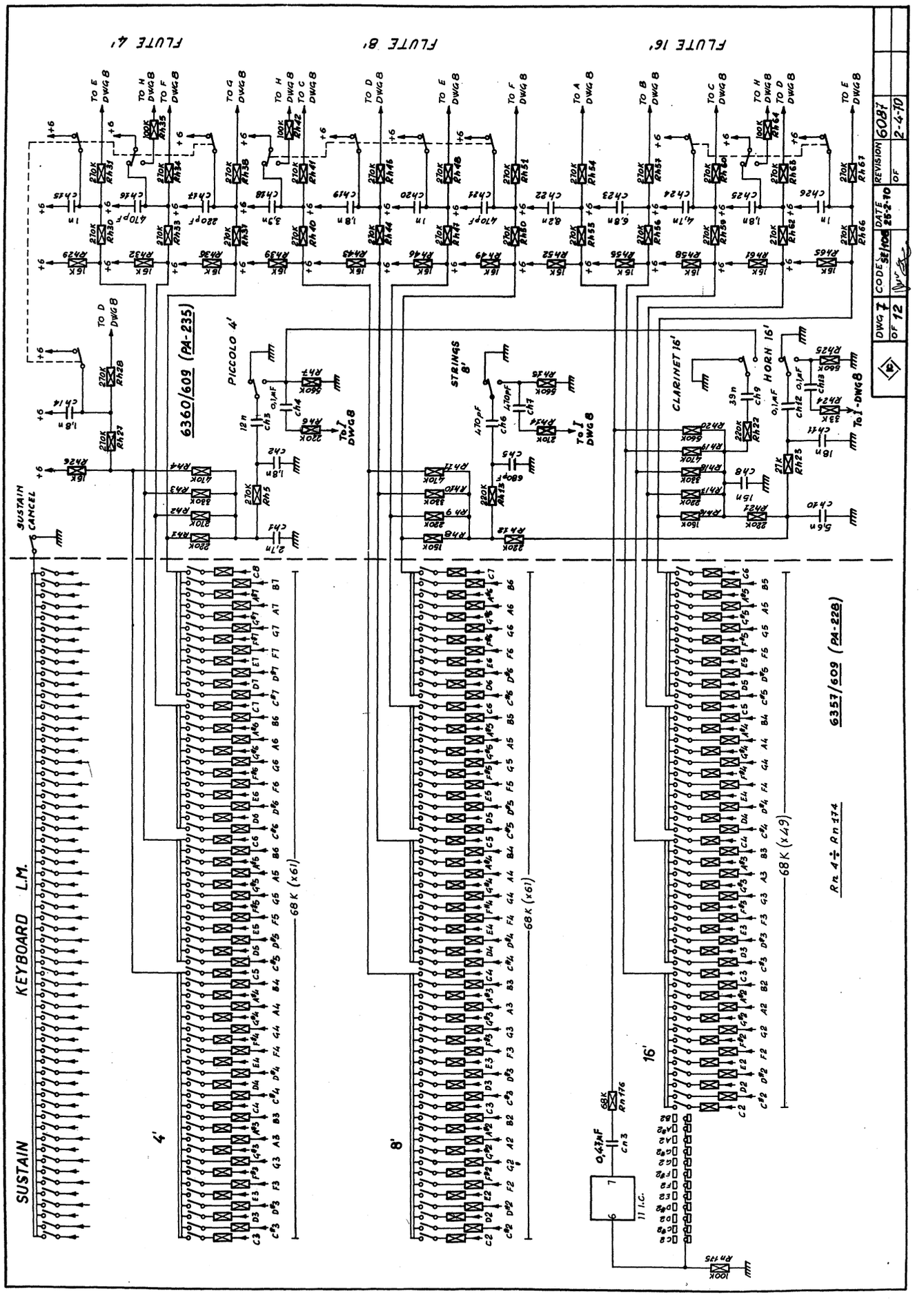
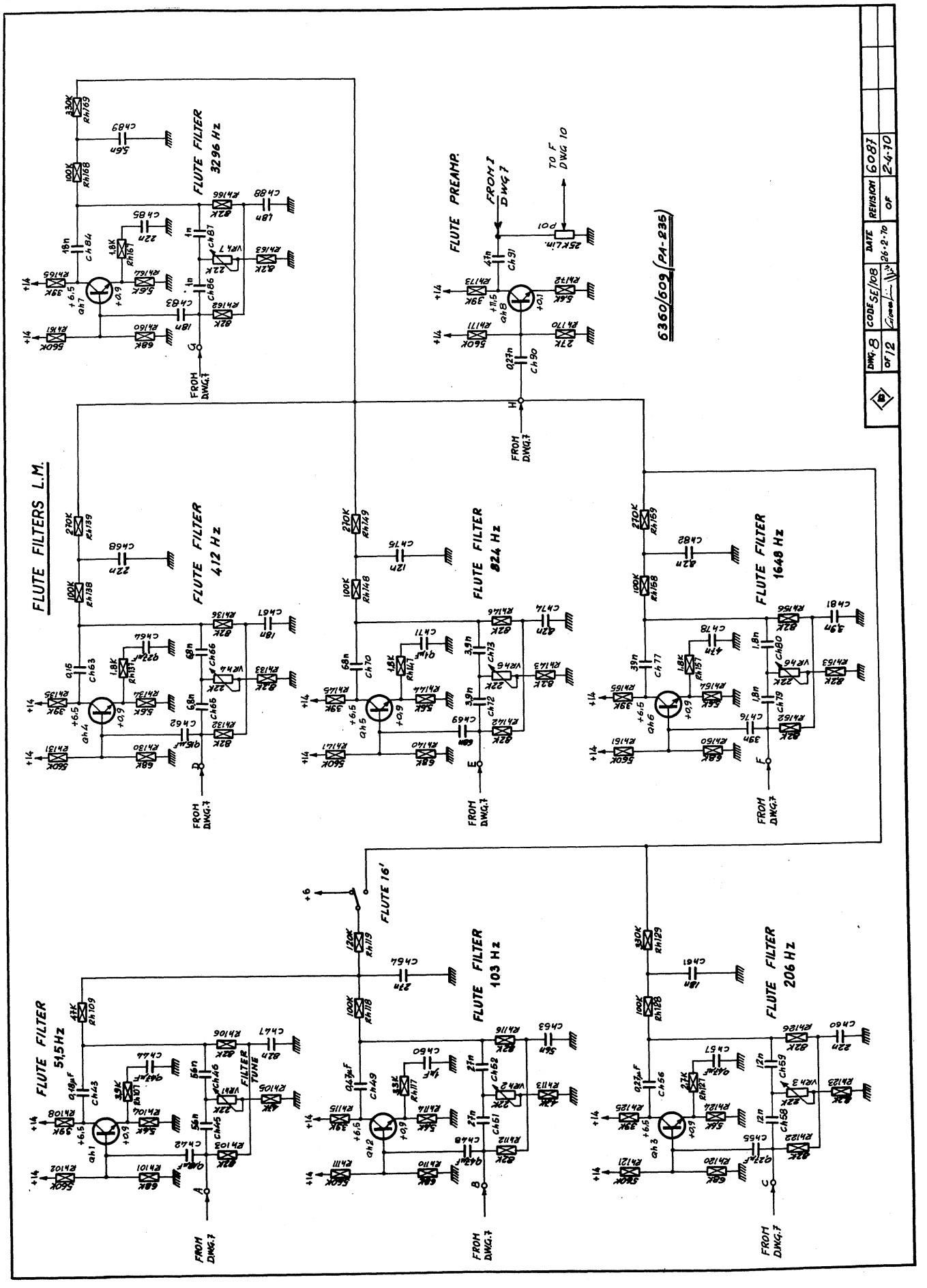
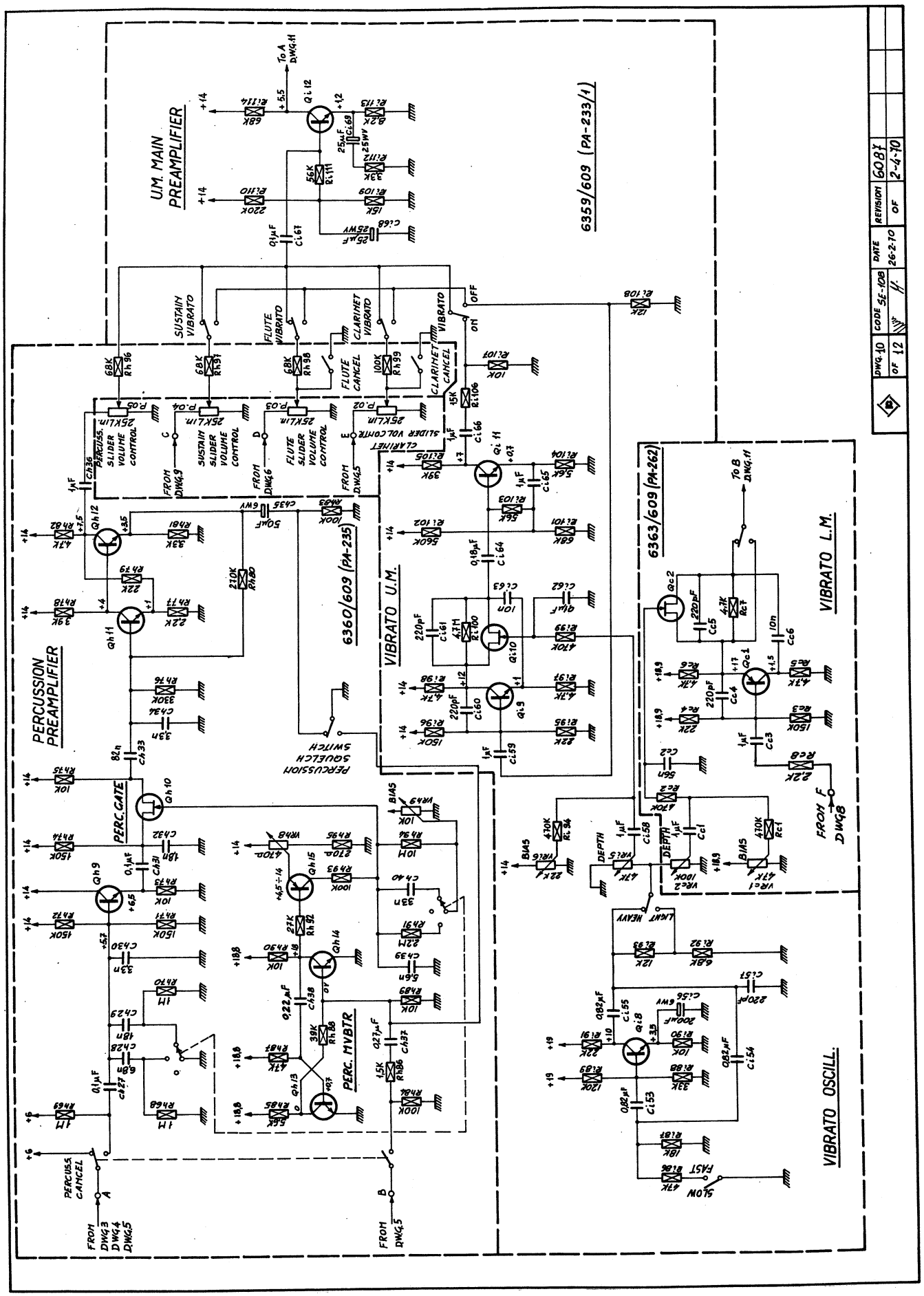
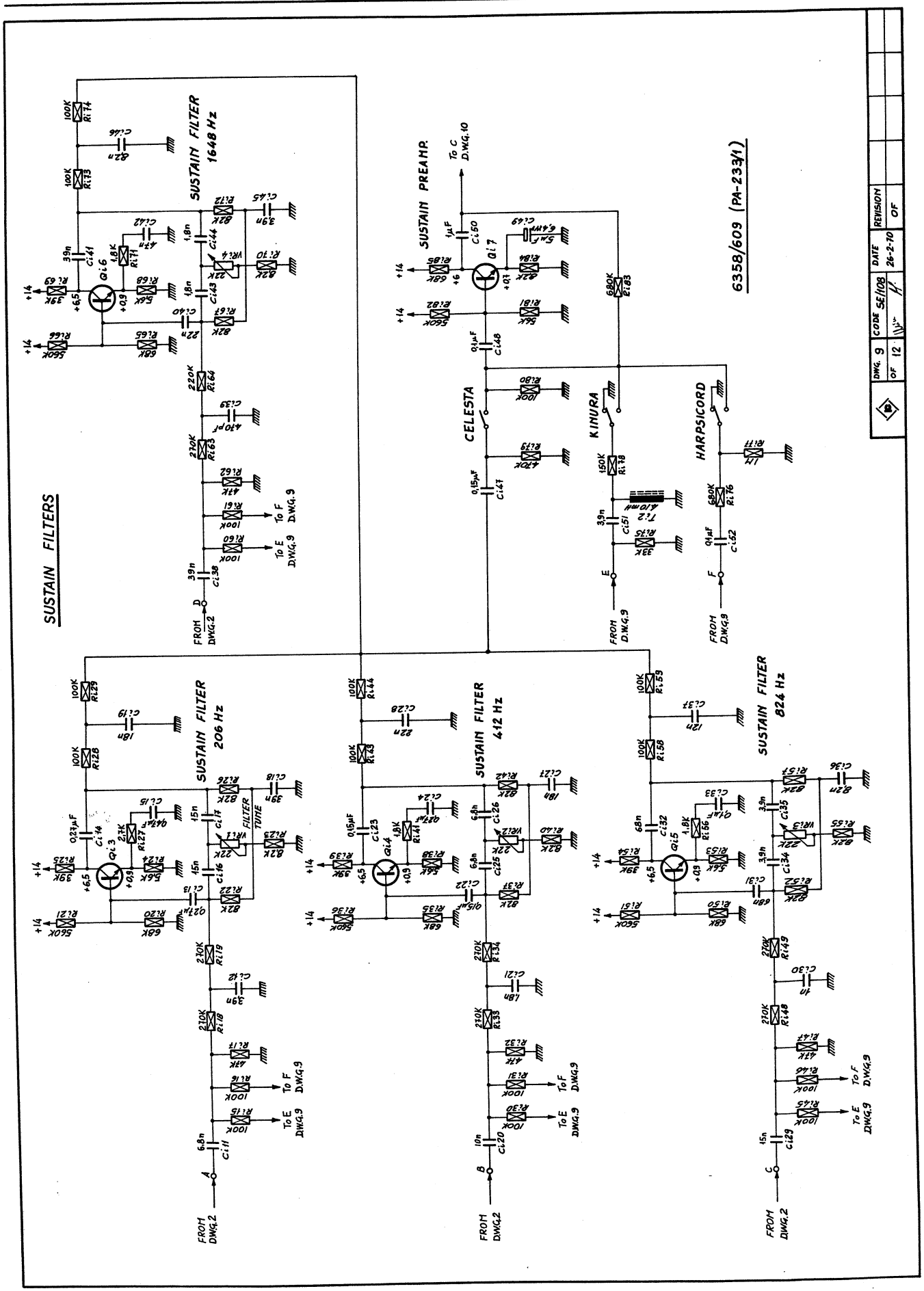
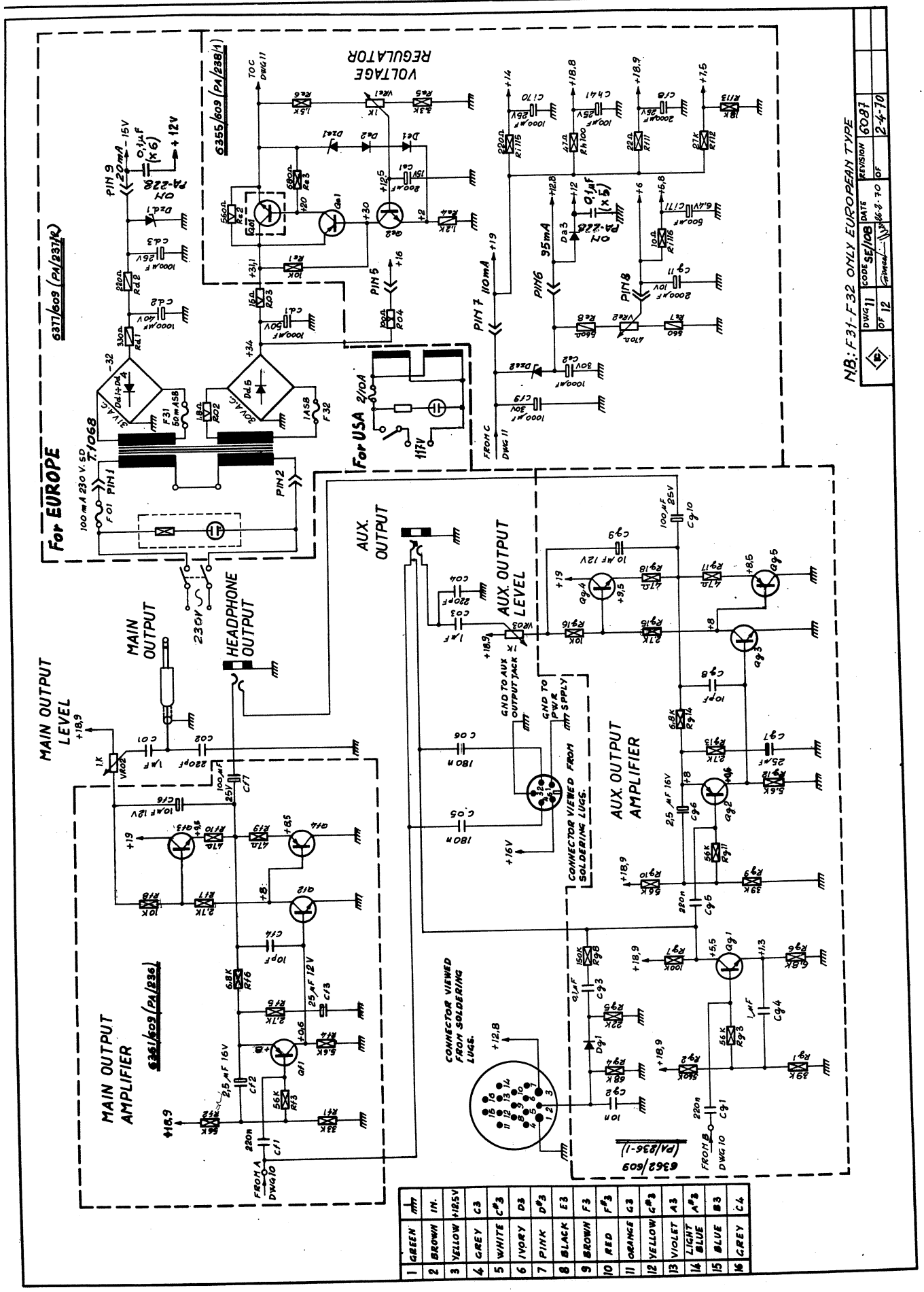

6358/609 (PA-232/1)
FLUTE FILTERS U.M.
FLUTE FILTER 103 Hz
FLUTE FILTER 206 Hz
FLUTE FILTER 412 Hz
FLUTE FILTER 824 Hz
FLUTE FILTER 1648 Hz
FLUTE FILTER 3296 Hz
FLUTE FILTER 6592 Hz
FLUTE PREAMP.
FILTER TUNE
FROM D.W.6.5
FROM D.W.6.4
FROM D.W.6.3
TO D DWG.10
DWG. 6 OF 14
CODE SE/108
DATE 26-2-70
REVISION OP


FLUTE 4'
FLUTE 8'
FLUTE 16'
6360/609 (PA-235)
PICCOLO 4'
STRINGS 8'
CLARINET 16'
HORN 16'
SUSTAIN CANCEL
SUSTAIN KEYBOARD L.M.
6353/609 (PA-228)
Rn 4÷Rn 174
68K (x61)
68K (x49)
4'
8'
16'
DWG 7
OF 12
CODE SE108
DATE 25-2-10
REVISION 6087
2-4-10

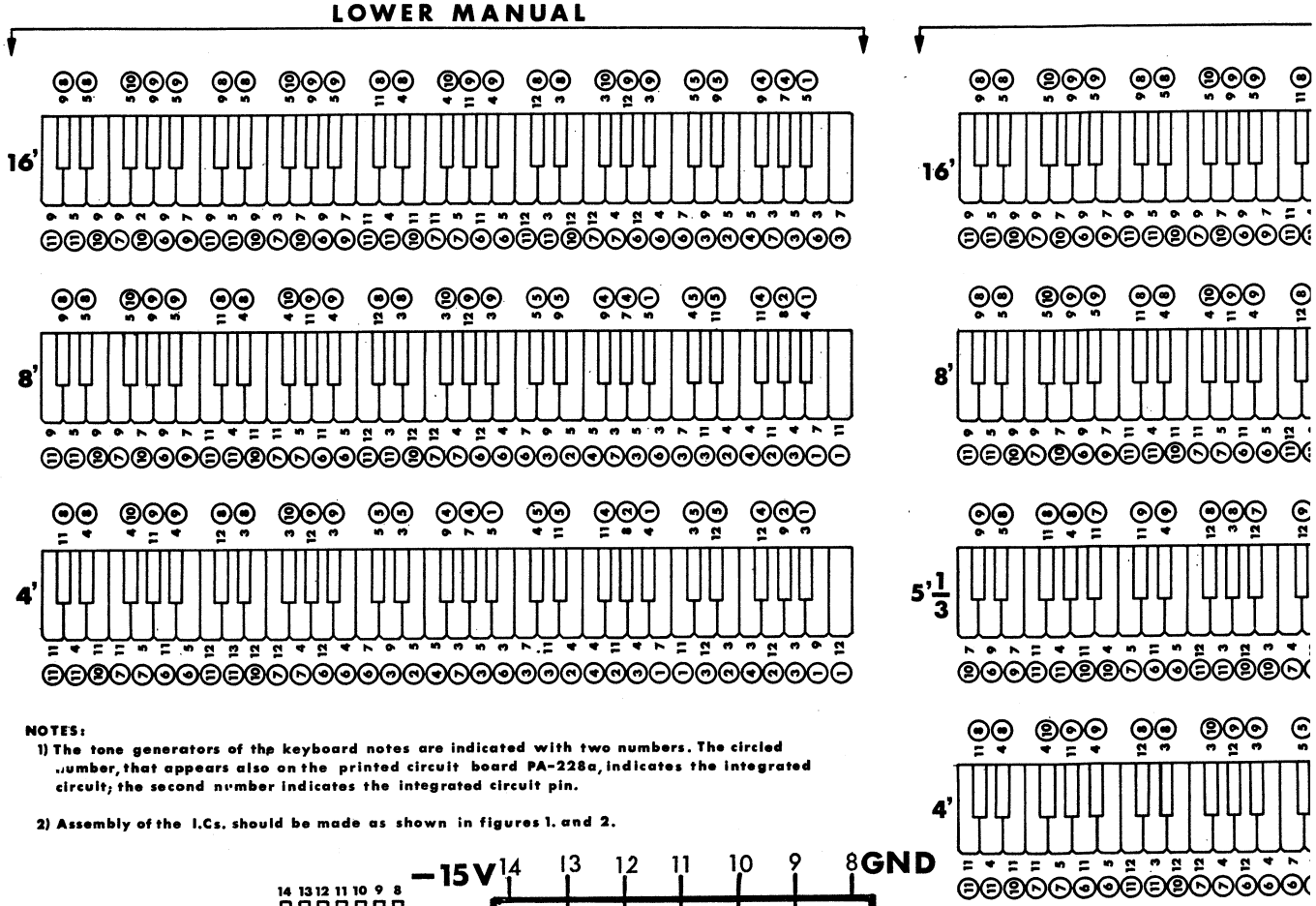

FLUTE FILTERS L.M.
FLUTE FILTER 3296 Hz
FLUTE FILTER 412 Hz
FLUTE FILTER 824 Hz
FLUTE FILTER 1648 Hz
FLUTE FILTER 51,5Hz
FLUTE FILTER 103 Hz
FLUTE FILTER 206 Hz
FLUTE 16'
FLUTE PREAMP.
6360/609 (PA-235)
FROM DWG.7
TO F DWG 10
DWG. 8 OF 12
CODE SE/108
DATE 26-2-76
REVISION
OF
6087
24-10


UM. MAIN PREAMPLIFIER
6359/609 (PA-233/1)
SUSTAIN VIBRATO
FLUTE VIBRATO
CLARINET VIBRATO
VIBRATO
OFF
ON
FLUTE CANCEL
CLARINET CANCEL
SLIDER VOLUME CONTROL
SUSTAIN SLIDER VOLUME CONTROL
FLUTE SLIDER VOLUME CONTROL
CLARINET SLIDER VOLUME CONTROL
PERCUSS. SLIDER VOLUME CONTROL
6363/609 (PA-262)
VIBRATO L.M.
6360/609 (PA-235)
VIBRATO U.M.
PERCUSSION PREAMPLIFIER
PERC. GATE
PERCUSSION SOUELCH SWITCH
PERC. MVBTR
VIBRATO OSCILL.
PERCUSS. CANCEL
DEPTH
LNGHT
HEAVY
FAST
SLOW
BIAS
FROM DWG.9
FROM DWG.6
FROM DWG.5
FROM DWG.3 DWG.4 DWG.5
FROM F DWG.8
TO A DWG.11
TO B DWG.11
DWG.10 OF 12
CODE SE-108
DATE 26-2-10
REVISION 608F OF 2-4-10


SUSTAIN FILTERS
SUSTAIN FILTER 1648 Hz
SUSTAIN FILTER 206 Hz
SUSTAIN FILTER 412 Hz
SUSTAIN FILTER 824 Hz
SUSTAIN PREAMP.
CELESTA
KINURA
HARPSICORD
6358/609 (PA-233/1)
DWG. 9 OF 12
CODE SE/108
DATE 26-2-10
REVISION OF
FROM DWG.2
FROM D.WG.9
TO F D.WG.9
TO E D.WG.9
TO C D.WG.10


VOLTAGE REGULATOR
6355/609 (PA/238/1)
6377/609 (PA/237K)
For EUROPE
For USA 2/10A
MAIN OUTPUT LEVEL
MAIN OUTPUT
HEADPHONE OUTPUT
AUX. OUTPUT
AUX. OUTPUT LEVEL
AUX. OUTPUT AMPLIFIER
MAIN OUTPUT AMPLIFIER
6361/609 (PA/236)
6362/609 (PA/236-1)
CONNECTOR VIEWED FROM SOLDERING LUGS.
N.B.: F31-F32 ONLY EUROPEAN TYPE
CODE SE/108
DATE 24-3-70
REVISION 6087
DWG 11
OF 12
1 GREEN
2 BROWN
3 YELLOW +12.5V
4 GREY
5 WHITE
6 IVORY
7 PINK
8 BLACK
9 BROWN
10 RED
11 ORANGE
12 YELLOW
13 VIOLET
14 LIGHT BLUE
15 BLUE
16 GREY

REFERENCE TABLE
KEY to GENERATOR-BOARD



NOTES:

1) The tone generators of the keyboard notes are indicated with two numbers. The circled number, that appears also on the printed circuit board PA-228a, indicates the integrated circuit; the second number indicates the integrated circuit pin.

2) Assembly of the I.Cs. should be made as shown in figures 1. and 2.

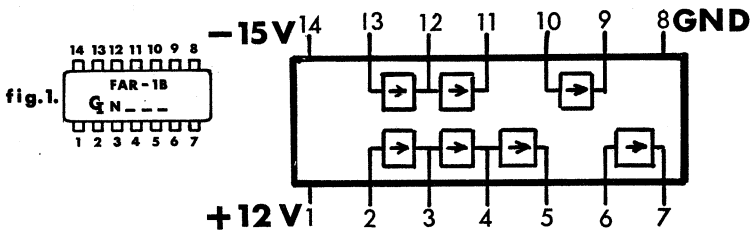
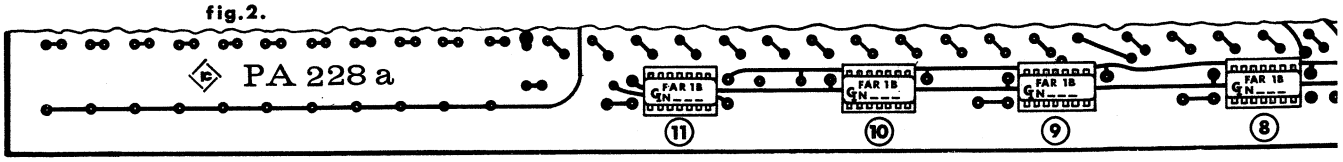
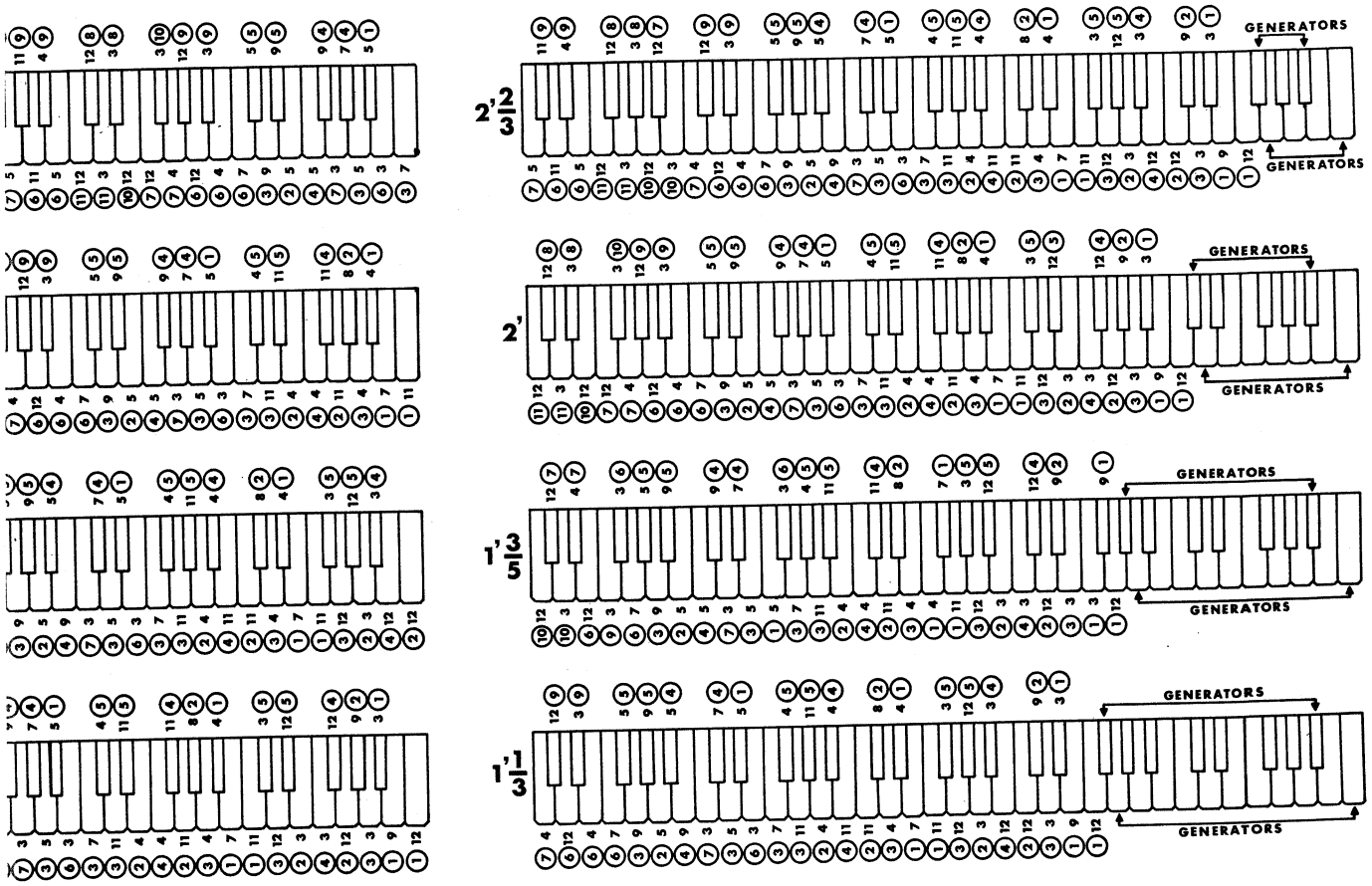
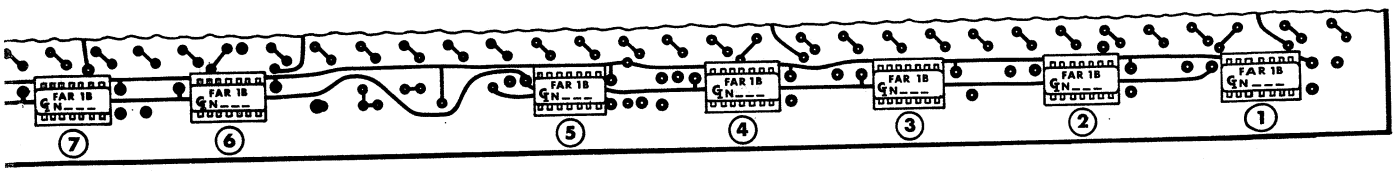


fig.2.

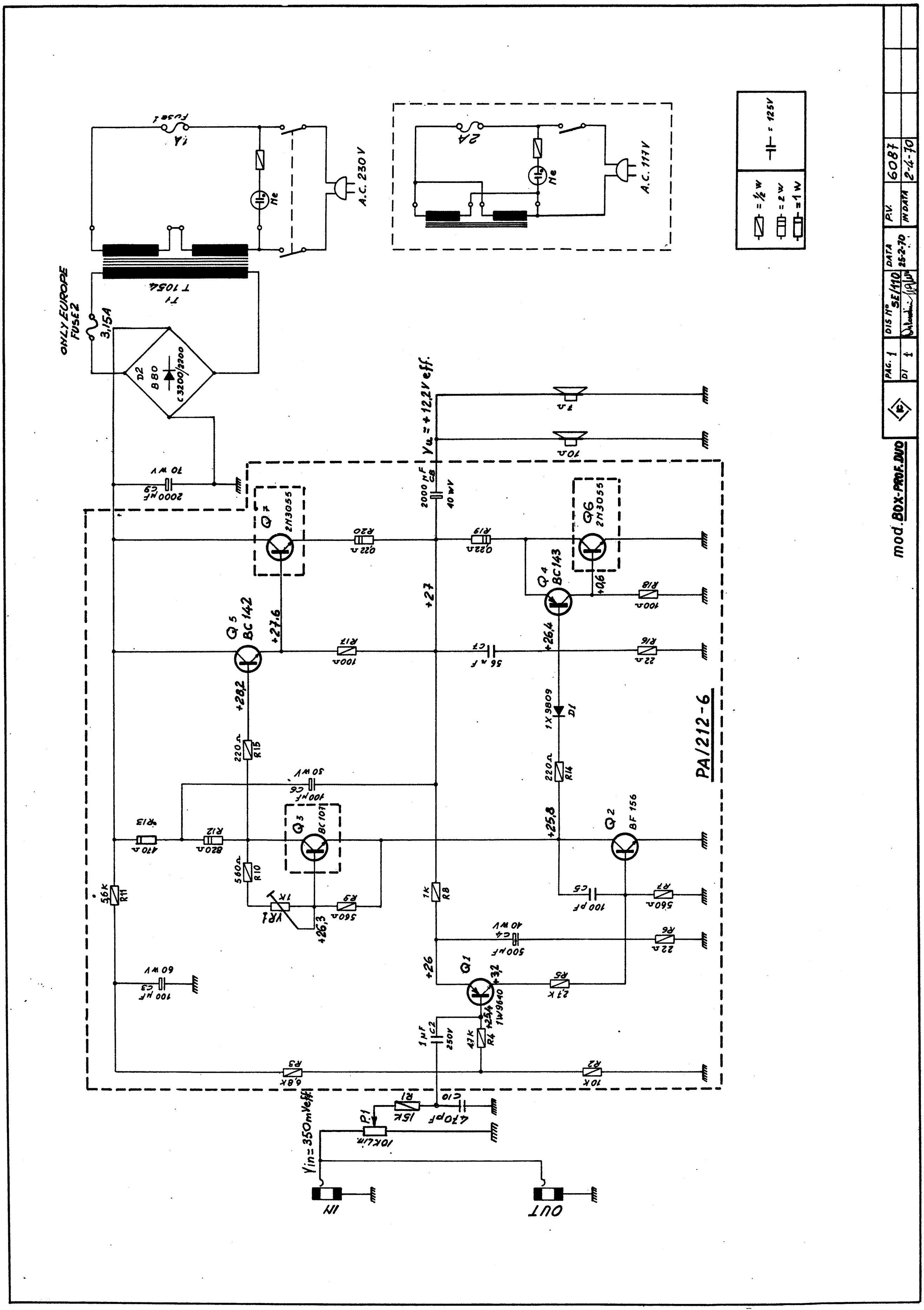


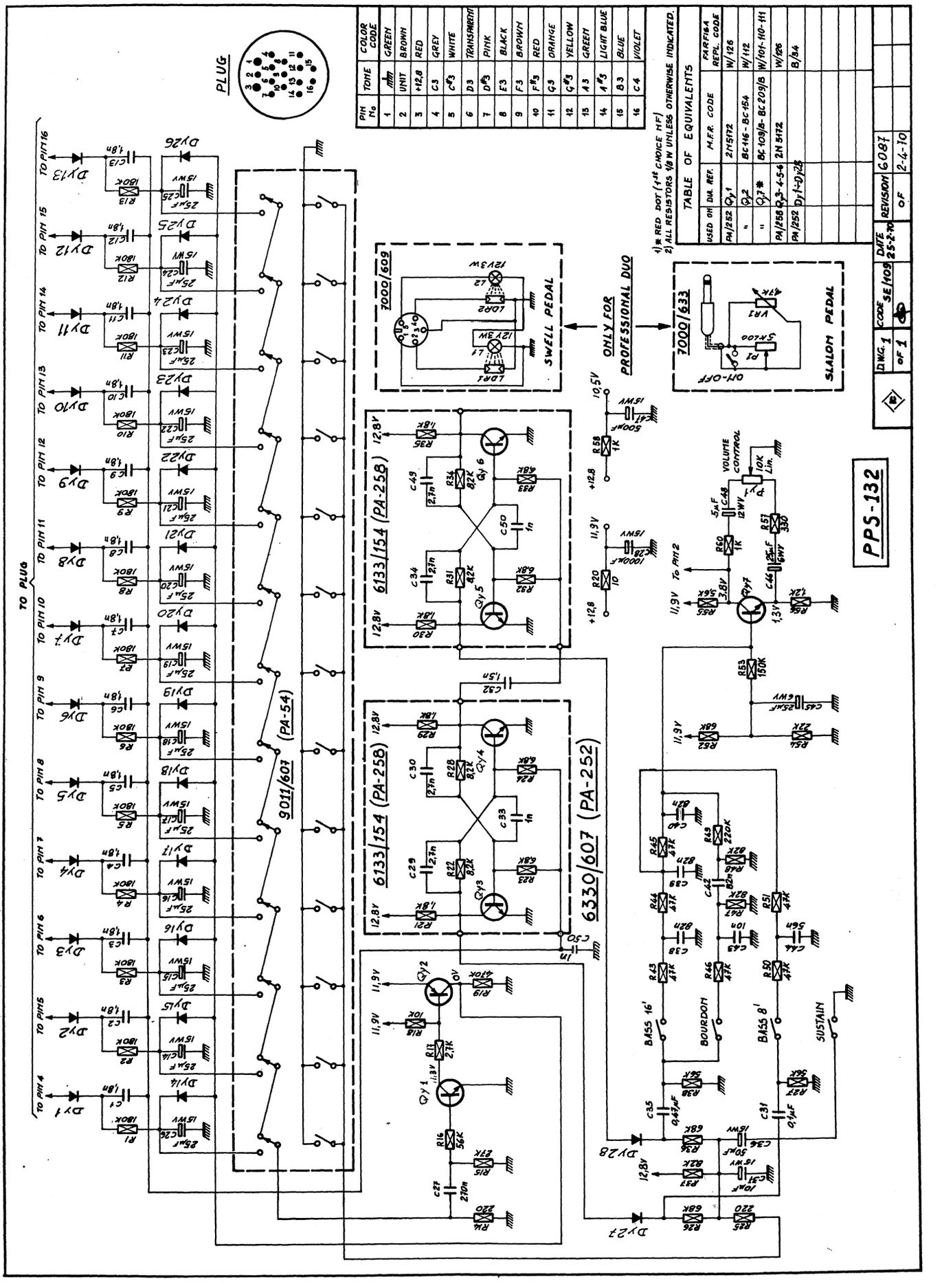
UPPER MANUAL





DWG	CODE	DATE	REVISION
12 OF 12	SE-108	24-2-70	OF


A.C. 230 V
A.C. 117 V
ONLY EUROPE FUSE 2
3,15A
Q 5 BC 142
Q 4 BC 143
Q 6 2N3055
Q 7 2N3055
Q 3 BC 107
Q 2 BF 156
Q 1
PA/212-6
Vu = + 12,2 V eff.
Vin = 350mVeff
IN
OUT
mod. BOX-PROF.DUO



PIN No	TONE	COLOR CODE
1	///	GREEN
2	UNIT	BROWN
3	+12,8	RED
4	C3	GREY
5	C#3	WHITE
6	D3	TRANSPARENT
7	D#3	PINK
8	E3	BLACK
9	F3	BROWN
10	F#3	RED
11	G3	ORANGE
12	G#3	YELLOW
13	A3	GREEN
14	A#3	LIGHT BLUE
15	B3	BLUE
16	C4	VIOLET

USED ON	DIA. REF.	M.F.R. CODE	PARFIAA REPL. CODE
PA/252	Qy1	2N5172	W/126
"	Qy2	BC146 - BC154	W/112
"	Qy3*	BC 109/B - BC 209/B	W/101-110-111
PA/258	Qy3-4-5-6	2N 5172	W/126
PA/252	Dy1-Dy28		B/34

DWG. 1	CODE 5E/109	DATE 25-2-70	REVISION 6087
OF 1		OF	2-4-70

Components identification list

GROUPS	COMPONENTS	
6020/609 - OSCILLATORS (PA/234-1)	R a1 ÷ R a7 C a1 ÷ C a2 D a1 ÷ D a3	Q a1 ÷ Q a3 VR a1
6381/609 - SUSTAIN (PA/260-4)	R b1 ÷ R b4 C b1 ÷ C b2 D b1	
6363/609 - VIBRATO L.M. (PA/262)	R c1 ÷ R c8 C c1 ÷ C c6	VR c1 - VR c2 Q c1 - Q c2
6377/609 - POWER SUPPLY (PA/237-2)	R d1 - R d2 C d1 ÷ C d3 D d1 ÷ D d5	Dz d1 F 31 - F 32
6355/609 - POWER SUPPLY (PA/238-1)	R e1 ÷ R e8 C e1 - C e2 D e1 - D e2	Dz e1 - Dz e2 VR e1 - VR e2 Q e1 - Q e2
6361/609 - MAIN OUT (PA/236)	R f1 ÷ R f13 C f1 ÷ C f8 Q f1 ÷ Q f4	
6362/609 - L.M. OUT (PA/236-1)	R g1 ÷ R g18 C g1 ÷ C g11	Q g1 ÷ Q g5 D g1
6360/609 - L.M. FILTERS-PERCUSSION (PA/235)	R h1 ÷ R h173 C h1 ÷ C h91	VR h1 ÷ VR h9 Q h1 - Q h15
6359/609 - SUSTAIN FILTERS VIBRATO (PA/233-1)	R i1 ÷ R i116 C i1 ÷ C i71 VR i1 ÷ VR i6	Q i1 ÷ Q i12 T i1 - T i2

./.

6358/609 - U.M. FILTERS (PA/232-1)	R 11 ÷ R 1221 C 11 ÷ C 189	VR 11 ÷ VR 17 Q 11 ÷ Q 18
6356/609 - U.M. CONTACT BOARD (PA/109-1)	R m1 ÷ R m476 C m1 ÷ C m63	
6357/609 - L.M. CONTACT BOARD (PA/228)	R n1 ÷ R n176 C n1 ÷ C n3 D n1 ÷ D n10	
CHASSIS	R o1 ÷ R o4 C o1 ÷ C o6 VR o1 ÷ VR o3	Q o1 P o1 ÷ P o5 F o1

Professional duo

S P E C I F I C A T I O N S

61 Note Upper Manual: C to C

61 Note Lower Manual: C to C

Console Base incorporating 13 note Pedalboard and Swell Pedal and Slalom Pedal

UPPER MANUAL VOICES

Flutes: 16' 8' 5 1/3' 4' 2 2/3' 2' 1 3/5' 1 1/3'
Vibrato On/Off - Independent Volume Control for Flutes

Clarinet/Sharp: 16' 8' 5 1/3' 4' 2 2/3' 2' 1 3/5' 1 1/3'
Vibrato On/Off - Independent Volume Control for Clarinet/Sharp

Percussion: 16' 8' 5 1/3' 4' 2 2/3' 2' 1 3/5' 1 1/3'
Independent Volume Control for Percussion
3-position Percussion Decay Switch
2-position Selector for Percussion with Synchronized Repetition or for Percussion according to the Phrasing

SUSTAIN

Celesta - Harpsichord - Kinura - Long/Short
Vibrato On/Off
Independent Volume Control for Sustain
Sustain working both on Upper and Lower Manuals or separately on each Manual

CANCEL TABS

Independent Cancel Tabs for Flutes, Clarinet/Sharp, Percussion
Sustain Upper Manual
Sustain Lower Manual

LOWER MANUAL VOICES

Flute 16' - Flute 8' - Flute 4' - Horn 16' - Clarinet 16' - Strings 8' - Piccolo 4'
Vibrato On/Off - Independent Volume Control for Lower Manual

PEDALBOARD VOICES (operated by foot-registers)

Bass 16' - Bourdon 16' - Bass 8' - Sustain On/Off - Volume control - Slalom control

Photoresistor operated Swell Pedal for Overall Volume Control

Exclusive Farfisa "Slalom" pedal

GENERAL VIBRATO CONTROLS

Long/Short Tab working on both Manuals
Fast/Slow Tab working on both Manuals
On/Off Tab working on Upper Manual only

OTHER CONTROLS

Mains Switch and Pilot light
230 Volt AC - 50/60 cycles (or 117 Volt AC for USA and CANADA)
Headset outlet
Socket for Pedalboard connection
Socket for Swell Pedal connection
Socket for connection of the exclusive Farfisa "SLALOM" pedal
Auxiliary Output for Pedalboard and Lower Manual
2 independent Level Controls for Main output and for Auxiliary output
General Pitch Control for tuning the organ from A 440 up to A 448
Switched AC Outlet to supply power to other equipment
Dimensions of the organ mounted on its legs: cm 103 x 65 x 110
Dimensions of the organ closed with wooden cover: cm 27 x 65 x 110.

POWER AMPLIFIER

Electrical Features:

Input impedance: 10 K ohm
Sensitivity: 350 mV RMS for 35 Watt
Dynamic music output power: 50 Watt
Harmonic Distortion: 0.2% at 1000 Hz either with 30 or 1 watt output power
Frequency response: between 20 and 50,000 Hz (within - 3 dB)
Working room temperature: from -30 up to +50°C

General Features:

Two 12" speakers
On/Off Mains Switch and Pilot light
230 Volt AC - 50/60 cycles (or 117 Volt AC for USA and CANADA)
Input jack
Output for up to 20 additional amplifiers
Switched A.C. socket to supply power to other equipment
Input attenuator
Dimensions: cm 46 x 97 x 35

A D J U S T M E N T S

O R G A N

VR e.1 - VR e.2 - VOLTAGE ADJUSTMENTS on POWER SUPPLY CHASSIS (49) on PA/238-1, REGULATOR BOARD - Fig. 11-12

Before attempting any of the following adjustments check the voltage on the test points marked +12,8 and +5,6. If one or both of the above voltages is not correct, adjust the former by VR e.2 and subsequently the latter by VR e.1

VR a.1 - OSCILLATORS TUNING - (29) on PA/234-1 TONE GENERATOR BOARD (28) Fig.5-13

Oscillators tuning is accomplished by the 12 potentiometers marked VR a.1 (29). Each potentiometer tunes all the notes of the same name throughout the organ, whichever tabswitch, octave, or keyboard be used. Tuning can be performed in any of the usual ways, such as setting A to the correct pitch by comparison to another instrument, or tuning fork, and then tuning the remaining notes by fifth and fourth, or using one of the many accessories such as the "Strobotuner", or by comparison with another correctly tuned instrument or a set of 12 tuning forks.

VR i.1 ÷ VR i.4 - SUSTAIN CELESTA FILTERS TUNE on PA/233-1 - Board (35) Fig.5-17

VR h.1 ÷ VR h.7 - L.M. FLUTE FILTERS TUNE on PA/235- Board (41) Fig. 5-15

VR l.1 ÷ VR l.7 - U.M. FLUTE FILTERS TUNE on PA/232-1 - Board (39) Fig. 5-16

Readjustment should not be necessary unless filter components are replaced; to adjust operate as follows: Connect an A.C. voltmeter or, preferably, an oscilloscope to the output jack of the organ, or, alternatively, to the speaker terminals of the power amplifier. Using only one flute tabswitch at a time and using only the even footages (16'-8'-4'-2'), play the note G# whose frequency is the one indicated beside the filter interested in the schematic diagram, and turn the corresponding adjusting trimmer for maximum output, or cleanest waveform on the oscilloscope.

VR c.1 (34); VR c.2 (33) - L.M. VIBRATO ADJ. on PA/262 - Board (32) Fig.4-5-14

VR i.5 (38); VR i.6 (37) - U.M. VIBRATO ADJ. on PA/233-1 Board (35) Fig.4-5-17

This adjustment is very critical and should be performed only if absolutely necessary. Operate as follows: Set the three Vibrato tabswitches in the ON position, and play a chord in the central octave of the keyboard with 8',4',2' on Vibrato tabswitches on the U.M. flute family included. Set VR i.5 in its approximate central position, and turn VR i.6 very slowly until some modulation is heard. At this point reduce modulation depth via VR i.5 at the minimum

which can be heard, and readjust VR i.6 for the cleanest modulation. Eventually repeat until no further improvement is obtained, always operating on VR i.6 very slowly, since this adjustment is very critical, and correct in a very narrow tolerance. Now increase modulation depth via VR i.5 up to the maximum clean modulation which can be obtained, just before "popping" occurs. The same adjustments apply to VR c.1 and respectively to VR c.2, except that this must be done playing a chord on the lower manual using 8' or 4' flute stops.

VR h.8 (43); VR h.9 (44) - PERCUSSION ADJ. on PA/235 - Board (41) Fig.6-15

These adjustments too are very critical. Adjustment is as follows: Using only 16' percussion tabswitch with VR h.8 at its approximate central position, hold a single note approximatly at the center of the keyboard, and adjust VR h.9 to the point just below the threshold, above which the note can be heard, then, with the percussion length switch in the long position, turn VR h.8 at its fully C.C.W. position, and hitting repeatedly the note, turn it C.W. until you have no further increase in the volume of the note heard. Going further on this adjustment increases the lenght of the percussion envelope, worsening its shape.

VR o.2 and VR o.3 ORGAN LEVEL on Control Panel - Fig. 9-10

With the organ connected to the amplifiers the customer usually uses, set these adjustments until, with the amplifier volume at about 3/4 of its rotation, clipping just begins playing heavy chords with all the organ level controls at maximum and most of the tabswitches included.

VR o.1 PITCH on Control Panel - Fig. 9-10

This control can be used by the customer to tune the organ with other instruments slightly out from A 440.

P E D A L B O A R D

VR 1 SLALOM ADJUSTMENT - Fig. 1-18-20

Adjust this trimmer until the slalom pedal operation range is exactly one octave. The trimmer operates only on the "minimum frequency" position of the pedal.

B O X A M P L I F I E R

VR 1 POWER AMPLIFIER BIAS ADJUSTMENT - PA/212-6 BOARD (86) - Fig. B2-B3

Connect a DC mV meter accross R 19 or R 20 and adjust VR 1 for a reading of 4 mV. The above adjustment must be made with no input signal and the amplifier at normal room temperature.

DIRECTIONS FOR THE ASSEMBLING OF THE ORGAN

1. Assembling of the organ with the power speaker box (Fig. 1)

1.1 Set the power speaker box between the organ legs by means of knobs (13) taking care that pins (89) in Fig. 1 bis - B2, are placed into the corre sponding housing on the organ legs (11 in Fig. 1-1 bis).

1.2 Put the organ (1) on the legs (11) and tighten the four thumb-screws (2)

1.3 Put the pedalboard assembly between the legs of the organ taking care that the holding-wings (67 in Fig. 19-20) are placed between the floor and the base of the legs.

1.4 Connect the following plugs to the sockets placed at the organ bottom:

a) 16 pin pedalboard plug (60 in fig. 9-10-18)
b) 5 pin pedalboard plug (61 in fig. 9-10-18)
c) Slalom pedal jack plug (62 in fig. 9-10-18)
d) Speaker box A.C. line cord plug (75 in fig. B1)

1.5 Insert the output cable jack plug of the organ (Fig. 9-10) into the socket (78 in Fig. B1) of the speaker box

2. Assembling of the organ without the power speaker box (Fig. 1 bis)

2.1 Set the less-fastening bracket (90 in Fig. 1 bis) between the organ legs by means of the mounting knobs (13)

2.2 Put the organ (1) on the legs (11) and tighten thumb-screws (2)

2.3 Put the pedalboard (14 in Fig. 1-2-18) between the organ legs as described at par. 1.3

2.4 Make connections as described at par. 1.4

2.5 Connect the output cable jack-plug of the organ to the audio input of your amplifier.
The A.C. line cord plug of the amplifier may be connected to the switched A.C. socket (115 or 220 volt) placed at the organ bottom.

DIRECTIONS FOR OPENING THE ORGAN TO REACH INSIDE PARTS

(Any work inside the organ shall be performed by specialized technicians)

1. To remove top cover as per Fig. 4-5

a) - Remove music stand (3 in Fig. 1-2)
b) - Remove the top cover mounting screws (5 in Fig. 1-3)
c) - Remove cover (4)

A - This operation allows you to reach the following parts:

- Tuning trimmers VR a 1 (29 in fig.5-13) mounted on generator boards PA 234-1
- Stop tabs assembly (25 in fig. 4-6-8)
- Printed board PA 233-1: Sustain, Filters, Vibrato, UM Preampl. (35 in Fig 4-5-6-17)
- Sustain Filters adjust. VR i 1...4 (36 in Fig. 5-17)
- U.M. Vibrato FET Bias adjust. VRi 6 (37 in Fig. 5-17)
- U.M. Vibrato depth adjust. VRi 5 (38 in Fig. 5-17)
- P.C. board PA 232-1; U.M. Flute Filters (39 in Fig. 4-5-16)
- U.M. Flute Filters adjust. VR l 1..7 (40 in Fig. 5-16)
- P.C. board PA 235 - L.M. Percussion (41 in Fig. 4-5-15)
- L.M. Flute Filters adjust. VR h 1...7 (42 in Fig. 5-15)
- To remove the stop tab mounting board, remove screws (27 in Fig. 4)

B - By tilting the rear wooden strip of the organ (21 in Fig. 2-5) the following parts may be reached:

- Generator board PA 234-1 (28 in Fig. 4 - 5-13)
- Amplifier board PA 236 (30 in Fig. 4-5-14)
- L.M. and auxiliary outputs amplifier board PA 236-1 (31 in Fig. 4-5-14)
- L.M. Vibrato board PA 262 (32 in Fig. 4-5-14)
- L.M. Vibrato depth adjust. (33 in Fig. 5-14)
- L.M. Vibrato FET bias adjust. (34 in Fig. 5-14)

2. To open the instrument as shown in Fig. 6

a) - Remove cover following directions at par. 1
b) - Remove mounting screws (26 in Fig. 4-6)
c) - Tilt stop-tab assembly

This operation allows you to reach the following parts:

- Percussion shape adjust. VRh8 (43 in Fig. 6-15)
- Percussion FET bias adjust. VRh9 (44 in Fig. 6-15)
- U.M. contact board PA 109-1 (46 in Fig. 6)

To remove the screen-panel:

a) - Unloose screws (45 in Fig. 6)
b) - Make panel slide 1/2" right side
c) - Remove the screen-panel

This operation allows you to reach the lower side of the following printed circuit boards:

- PA 233-1 (35 in Fig. 4-5-6-17)
- PA 232-1 (39 in Fig. 4-5-6-16)
- PA 235 (41 in Fig. 4-5-6-15)
- Percuss. shape adj. VRh8 (43 in Fig. 6-15)
- Percuss. FET bias adj. VRh9 (44 in Fig. 6-15)

3. To open the instrument as shown in Fig. 7 and 8 :

a) - Remove organ top following directions 1
b) - Remove left and right cheek-blocks by unloosing screws (23 in Fig 3-4)
c) - Remove upper keyboard holding screws (48 in Fig. 7)
d) - Tilt up upper keyboard

The following parts can now be reached

- Upper Keyswitches (47 in Fig. 7)
- L.M. contact board PA 228/a (51 in Fig. 7)
- I.C. frequency dividers (52 fig. 8)
- U.M. and L.M. holding screws

4. To remove bottom panel (58 in Fig. 9-10)

Unloose mounting screws (59 in Fig. 9-10)

The following parts can now be reached:

- Power supply (49 in Fig. 7-10)
- Control panel (55)

5. To open the box of Pedalboard as shown in Fig. 20

- Remove the pedalboard top mounting screws (66 in Fig. 19)
- Remove top

The following parts can now be reached:

- Pedalboard registers (16 in Fig. 1-18-20)
- Bass pedal volume control (69 in Fig. 18-20)
- Slalom tab
- P.C. board PA 252 pedalb. Filters and sustain (68 in Fig. 20-21)
- P.C. board PA 54 bass pedal keyswitches (70 in Fig. 20-21)
- Slalom pedal
- Swell pedal

POWER SPEAKER BOX

6. To open the power speaker box as shown in Fig. B 2

(Service can be carried out without removing the box from the organ)

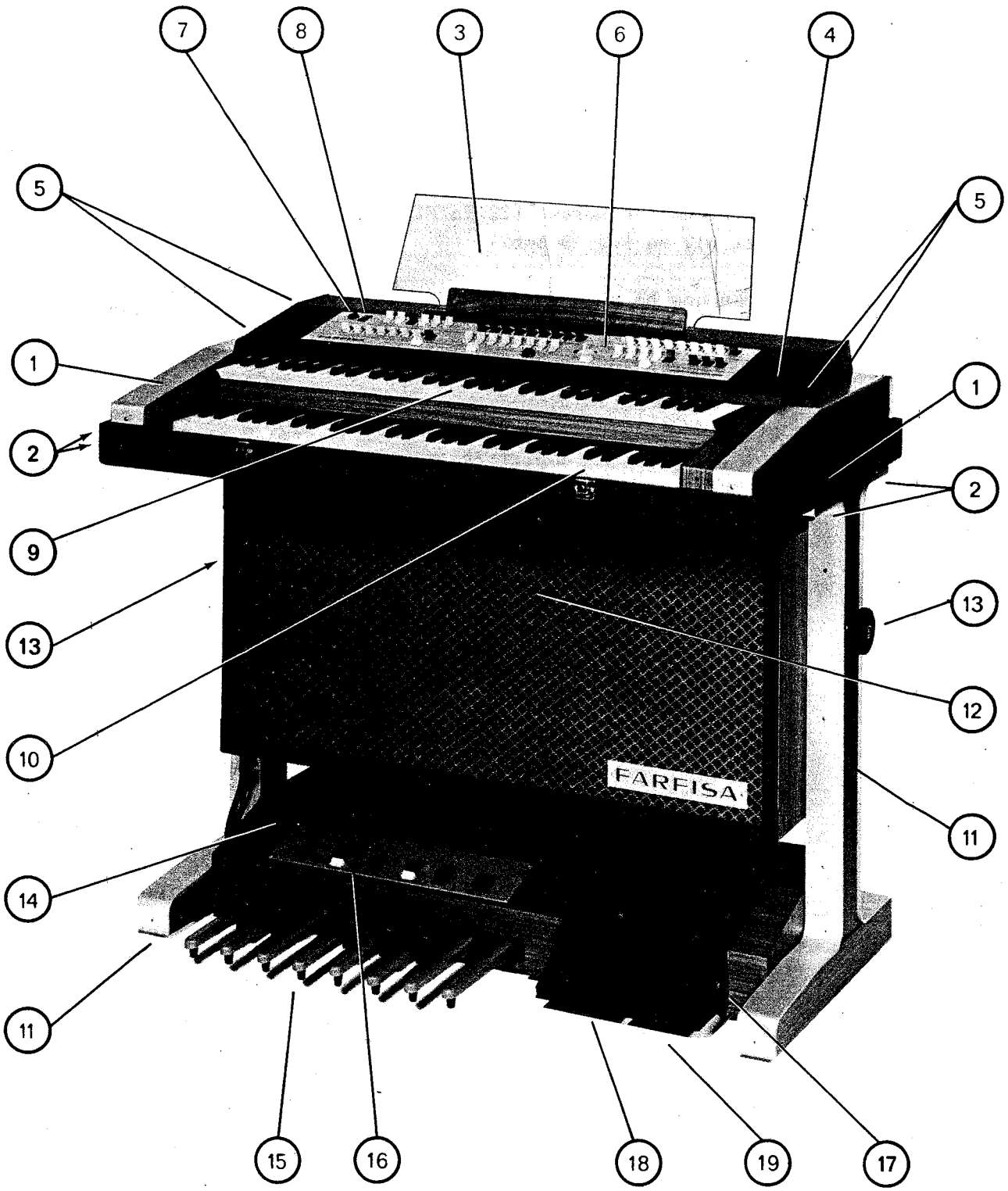
a) - Remove back panel mounting screws (22 in Fig. 2)
b) - Remove back panel (12 in fig. B 1-B2)

The following parts can now be reached:

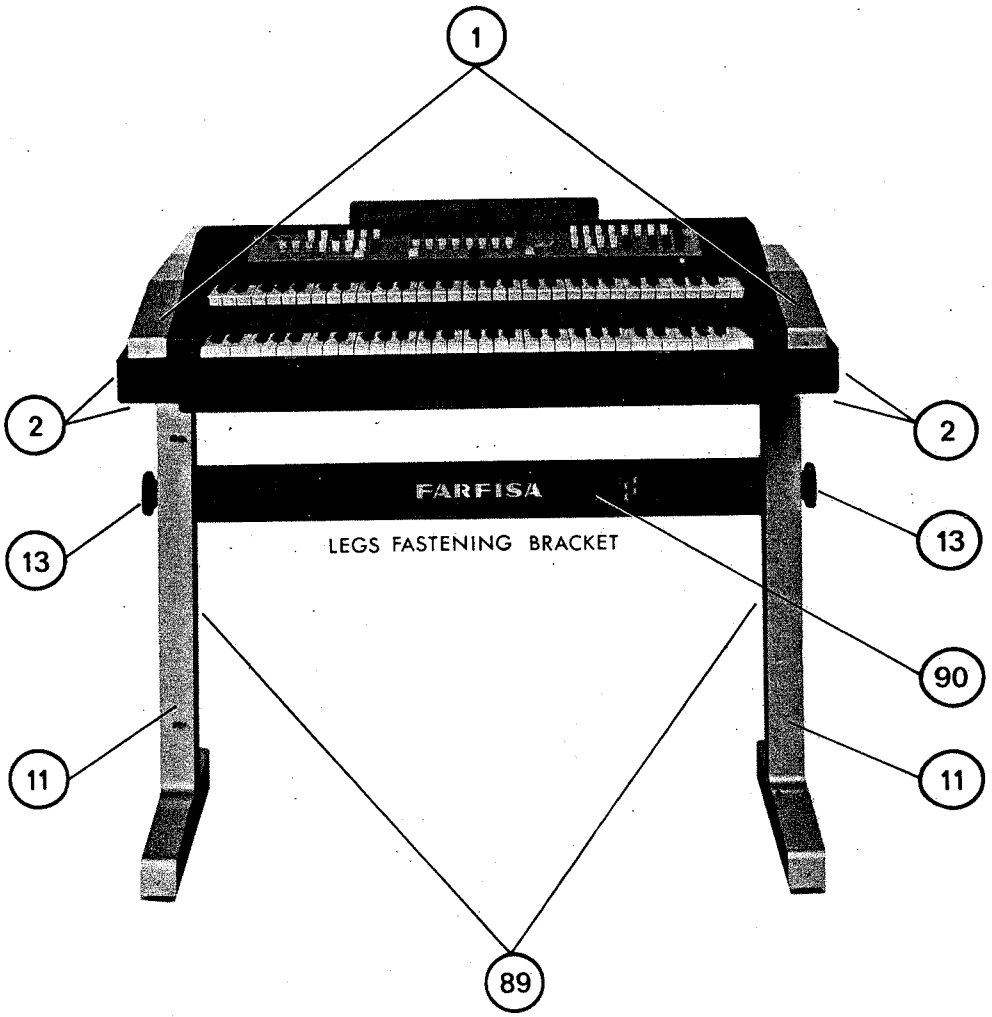
- Speakers (82 in Fig. B 2)
- Control panel (74 in Fig. B 2)
- Power amplifier (83 in Fig. B 2)
- To reach the printed circuit board PA 212-6 (86 in Fig. B 2) remove the metal cover of the amplifier by unloosing its screws
- To service the amplifier unit remove screws (73 in Fig B 1)

Professional duo (CONSOLE VERSION) FIG. 1

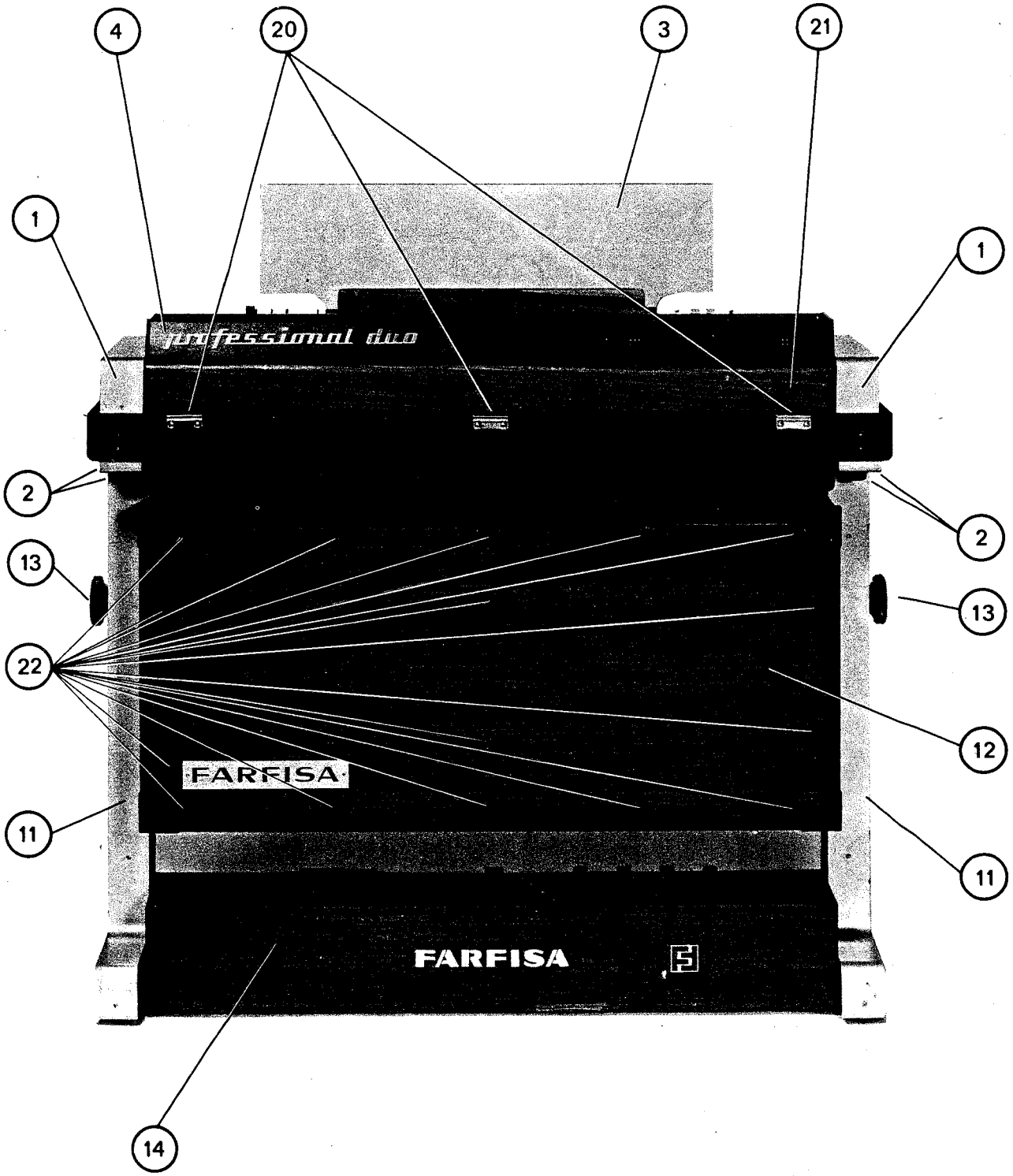
FRONT VIEW



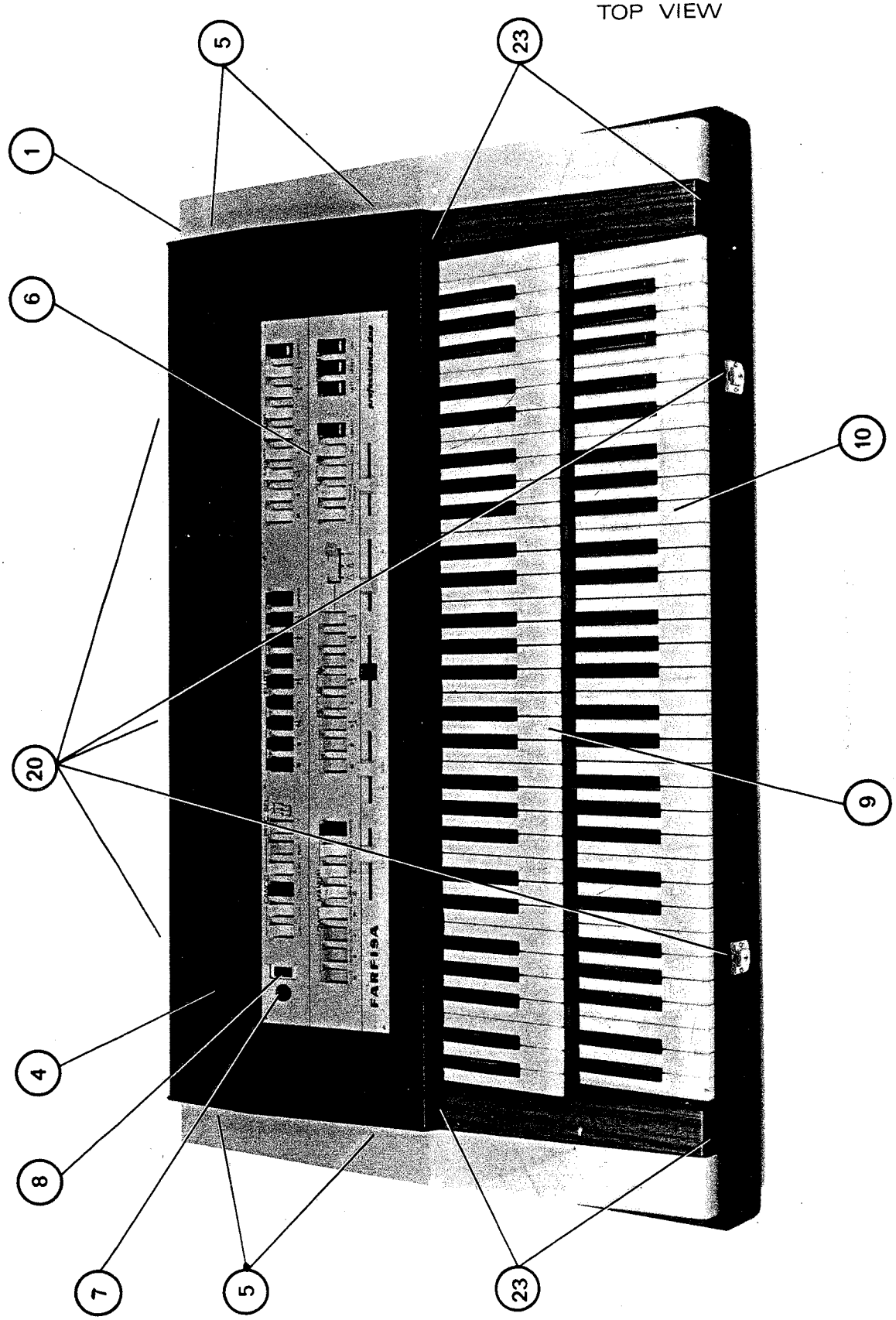
FRONT VIEW



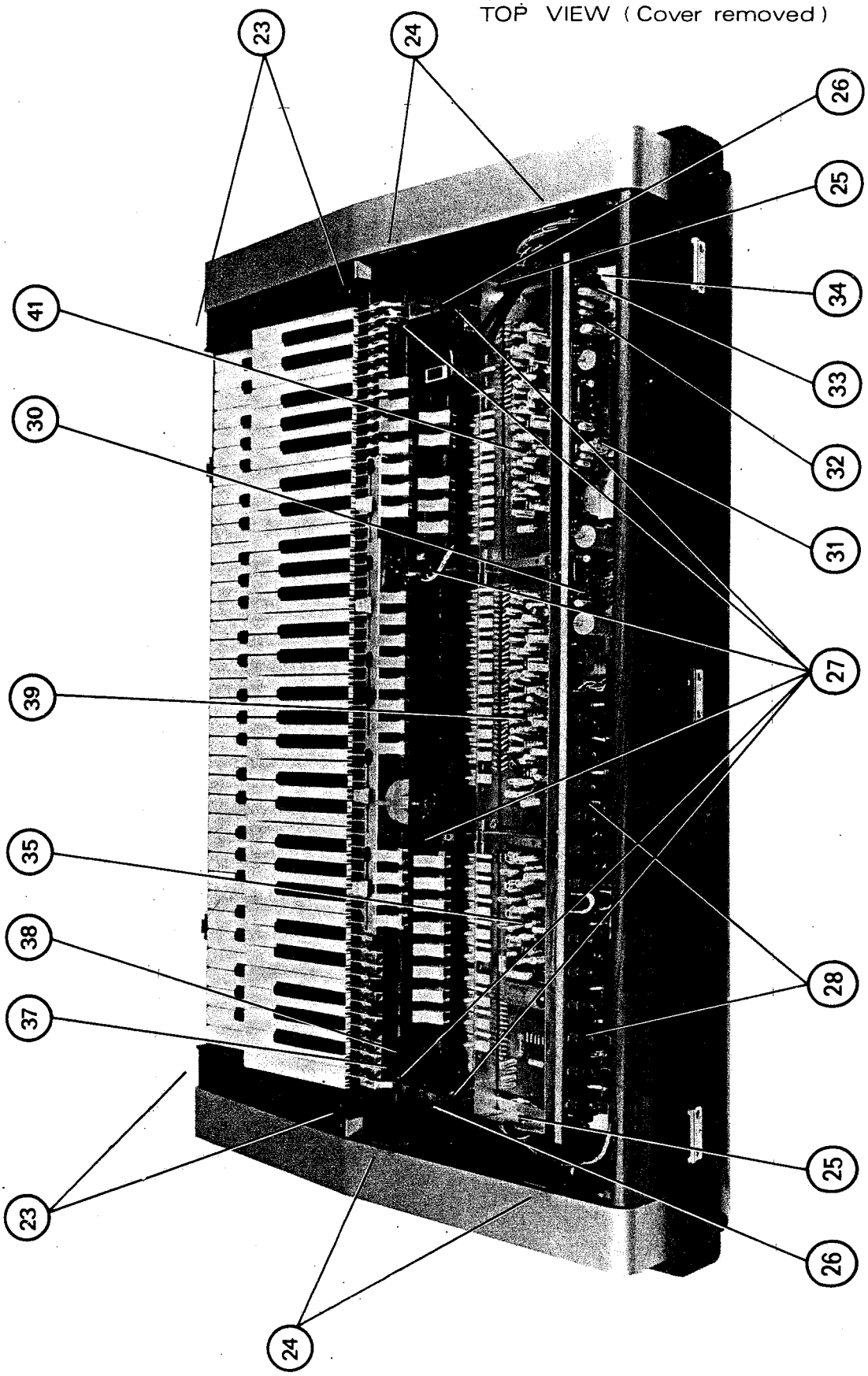
BACK VIEW


4
20
3
21
1
1
professional duo
2
2
13
13
22
12
FARFISA
11
11
FARFISA
14

TOP VIEW



TOP VIEW (Cover removed)



TOP VIEW (Cover removed)

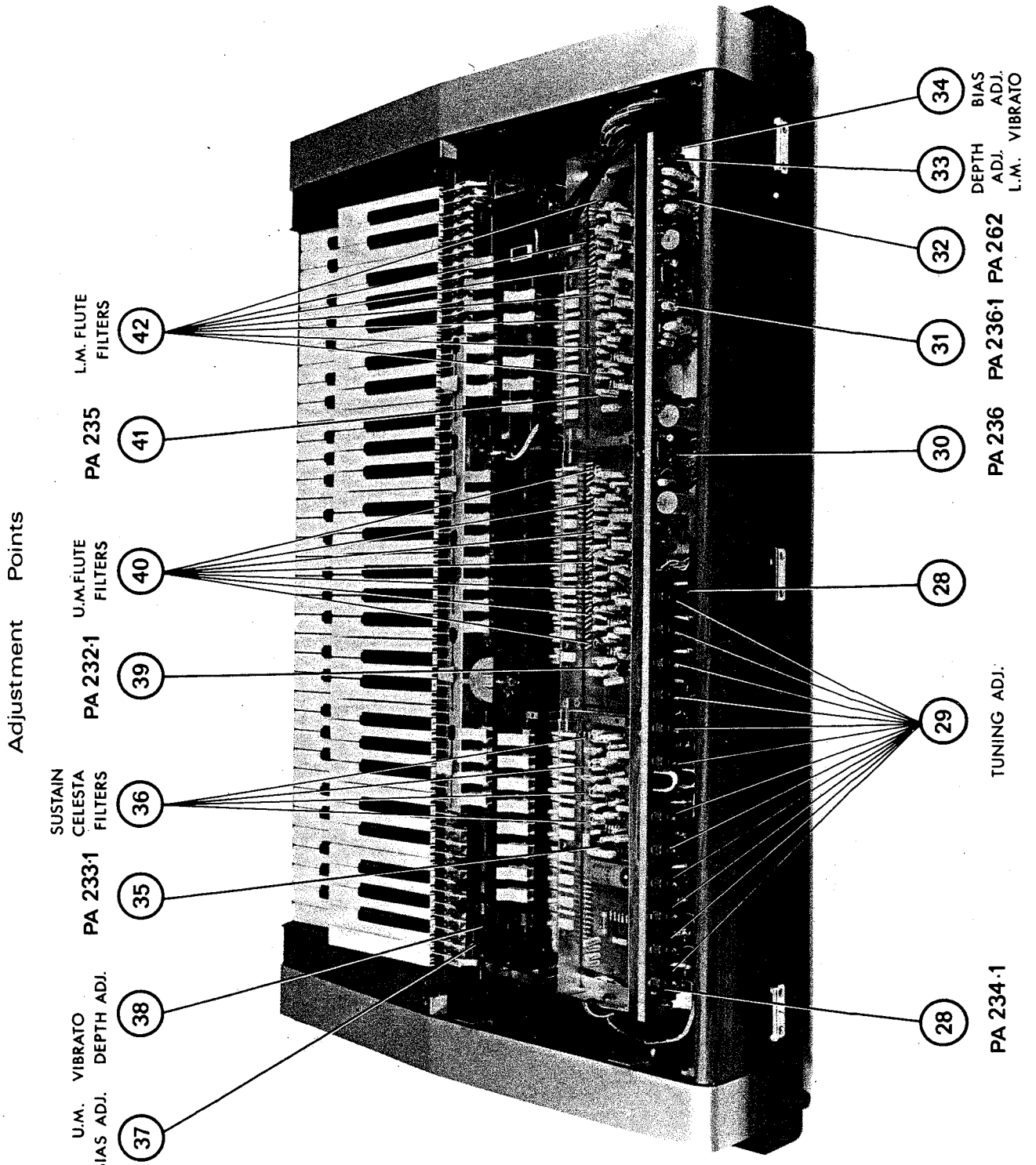
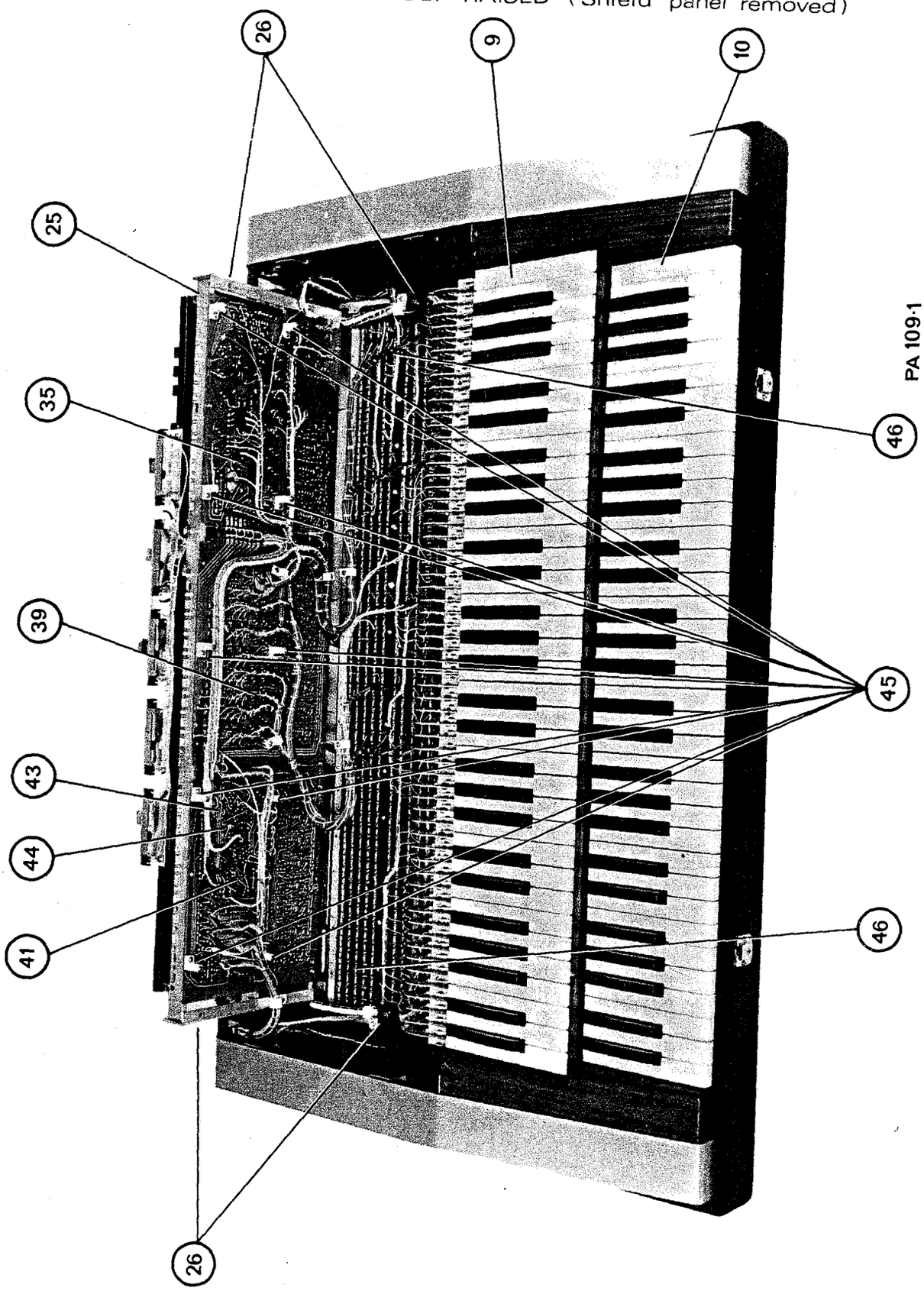
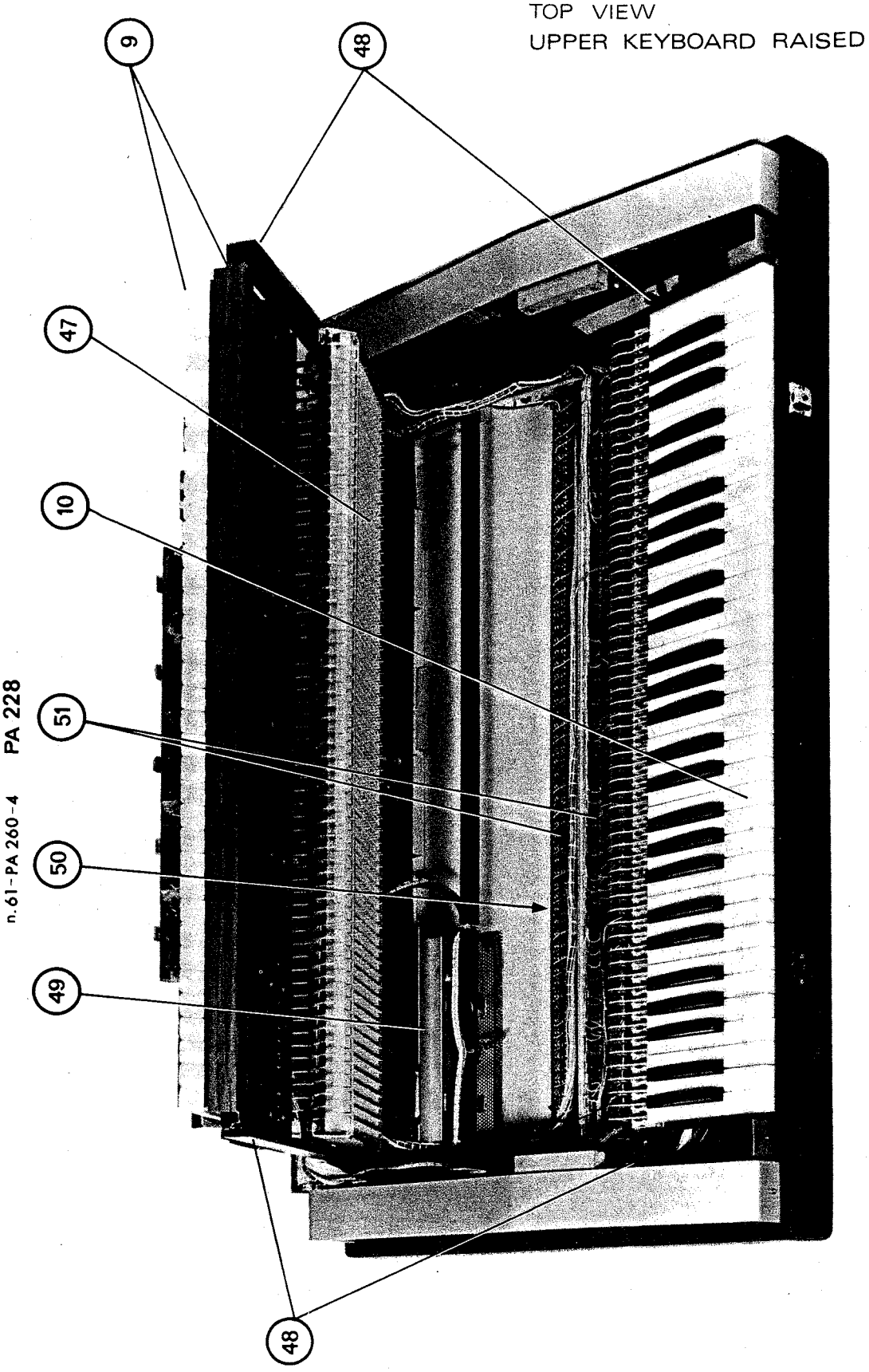


FIG. 6

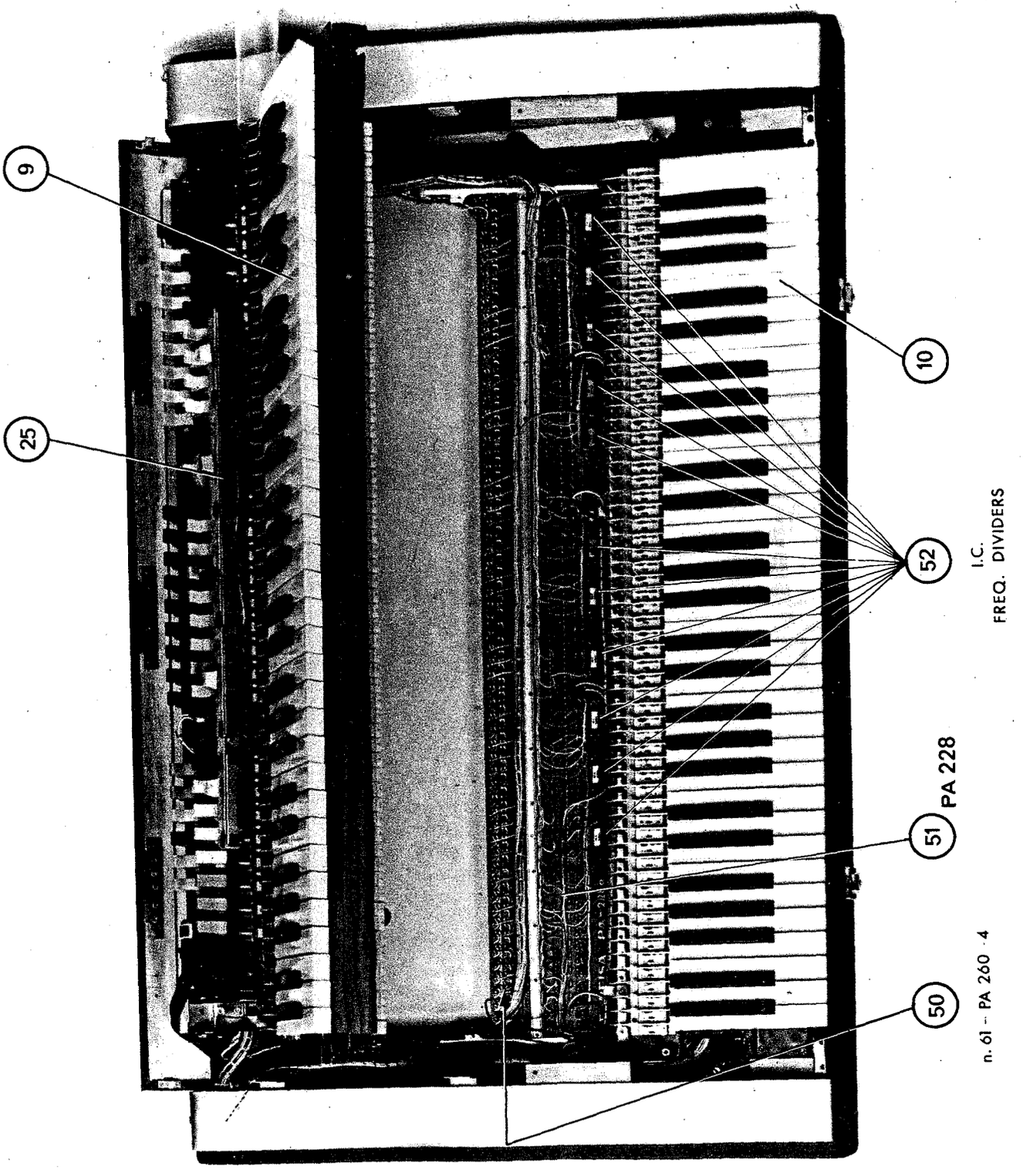
TOP VIEW – TABSWITCH ASSEMBLY RAISED (Shield panel removed)



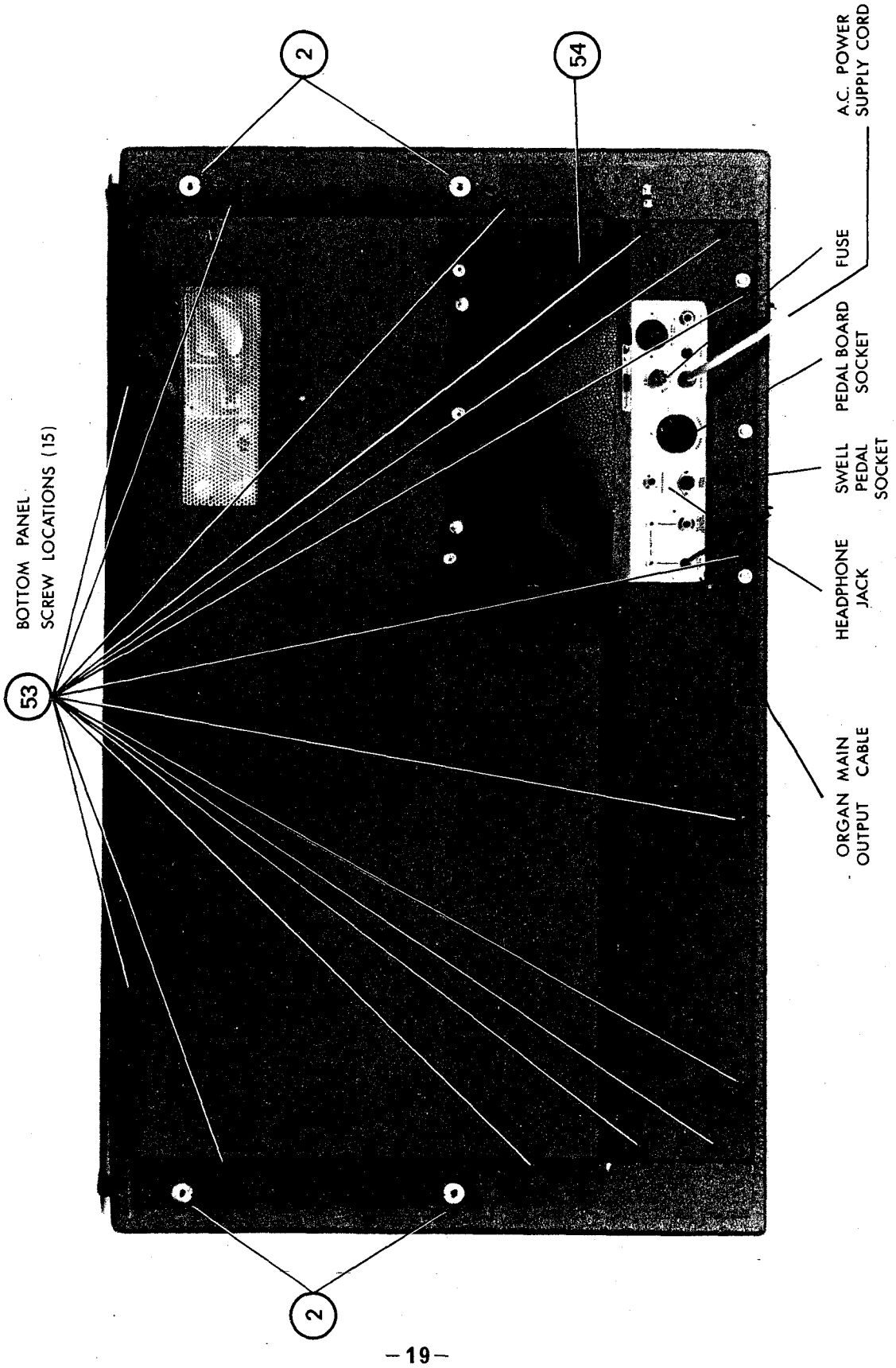
TOP VIEW
UPPER KEYBOARD RAISED



TOP VIEW - UPPER KEYBOARD RAISED
L.M. Keyswitch wiring and frequency divider identification

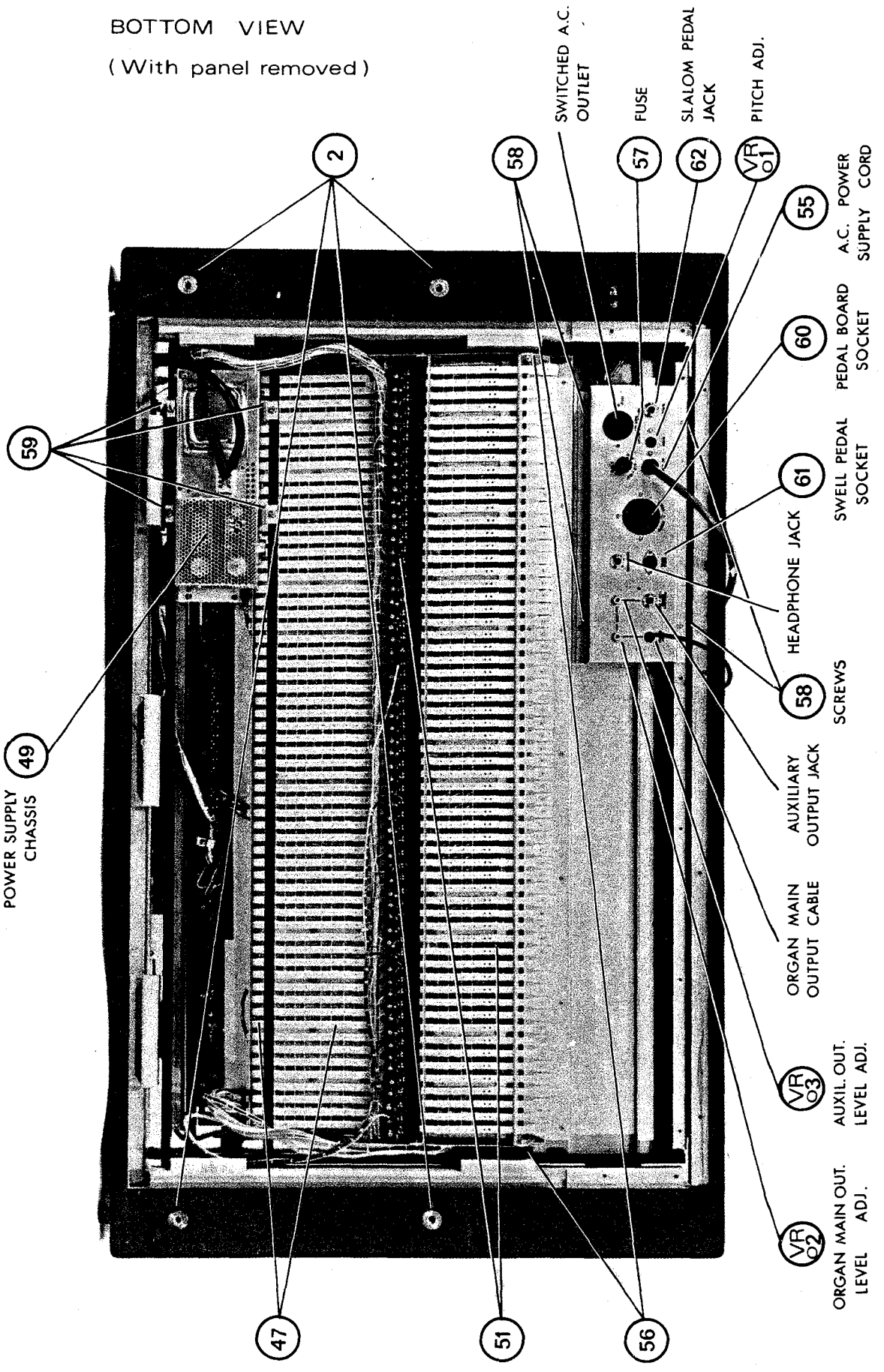


BOTTOM VIEW

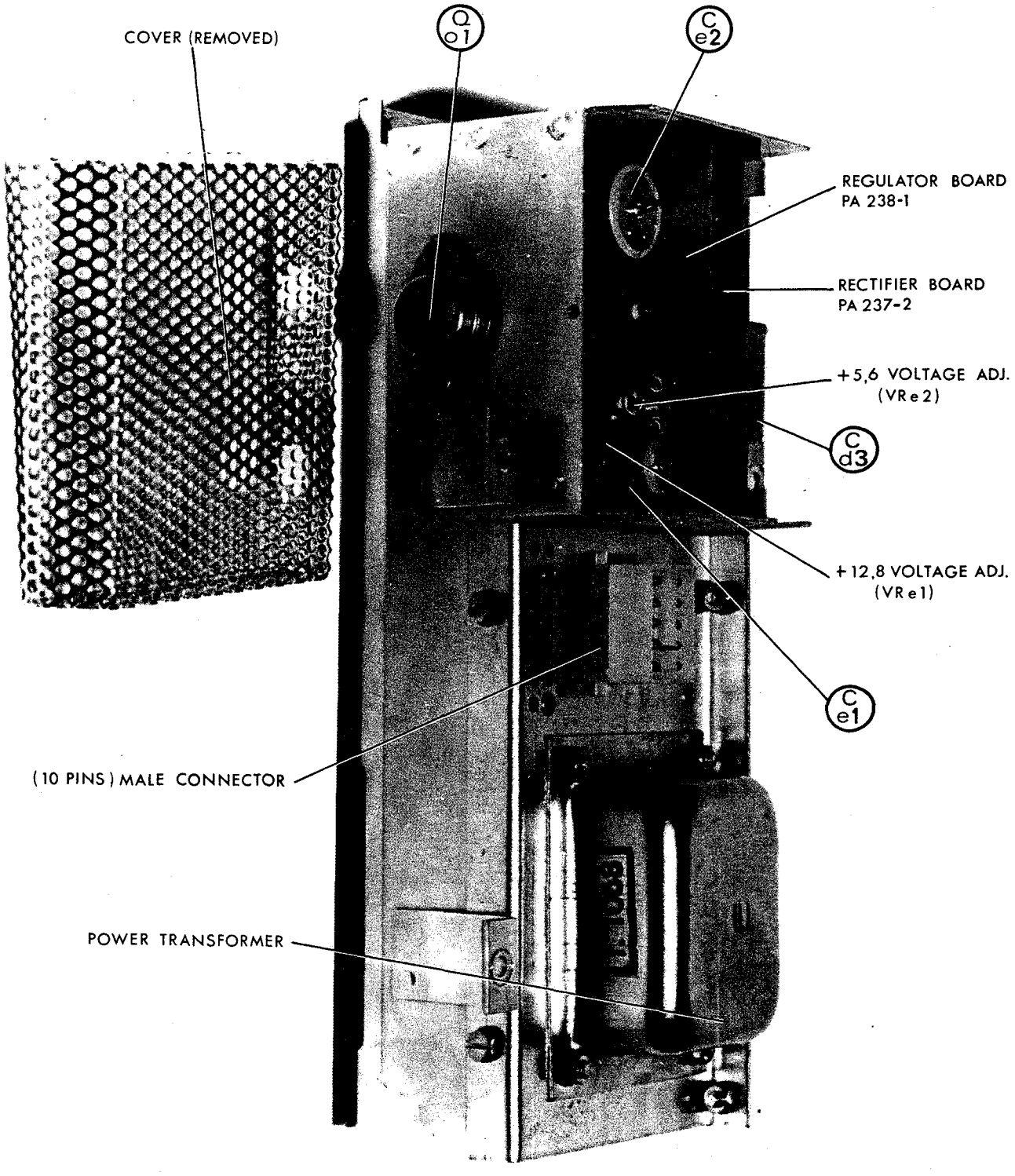

2
54
A.C. POWER SUPPLY CORD
FUSE
PEDAL BOARD SOCKET
SWELL PEDAL SOCKET
HEADPHONE JACK
ORGAN MAIN OUTPUT CABLE
BOTTOM PANEL SCREW LOCATIONS (15)
53
2

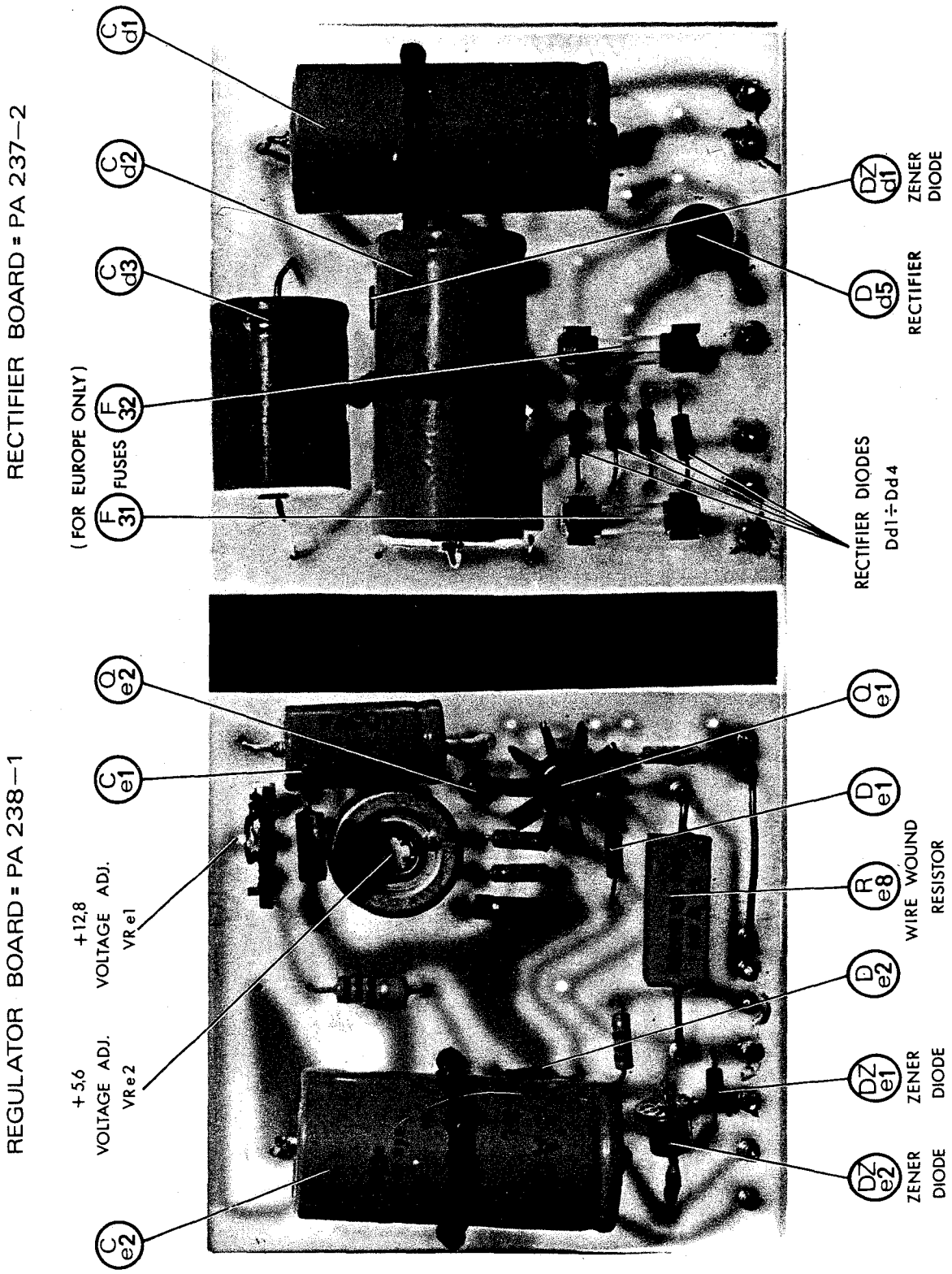
BOTTOM VIEW

(With panel removed)

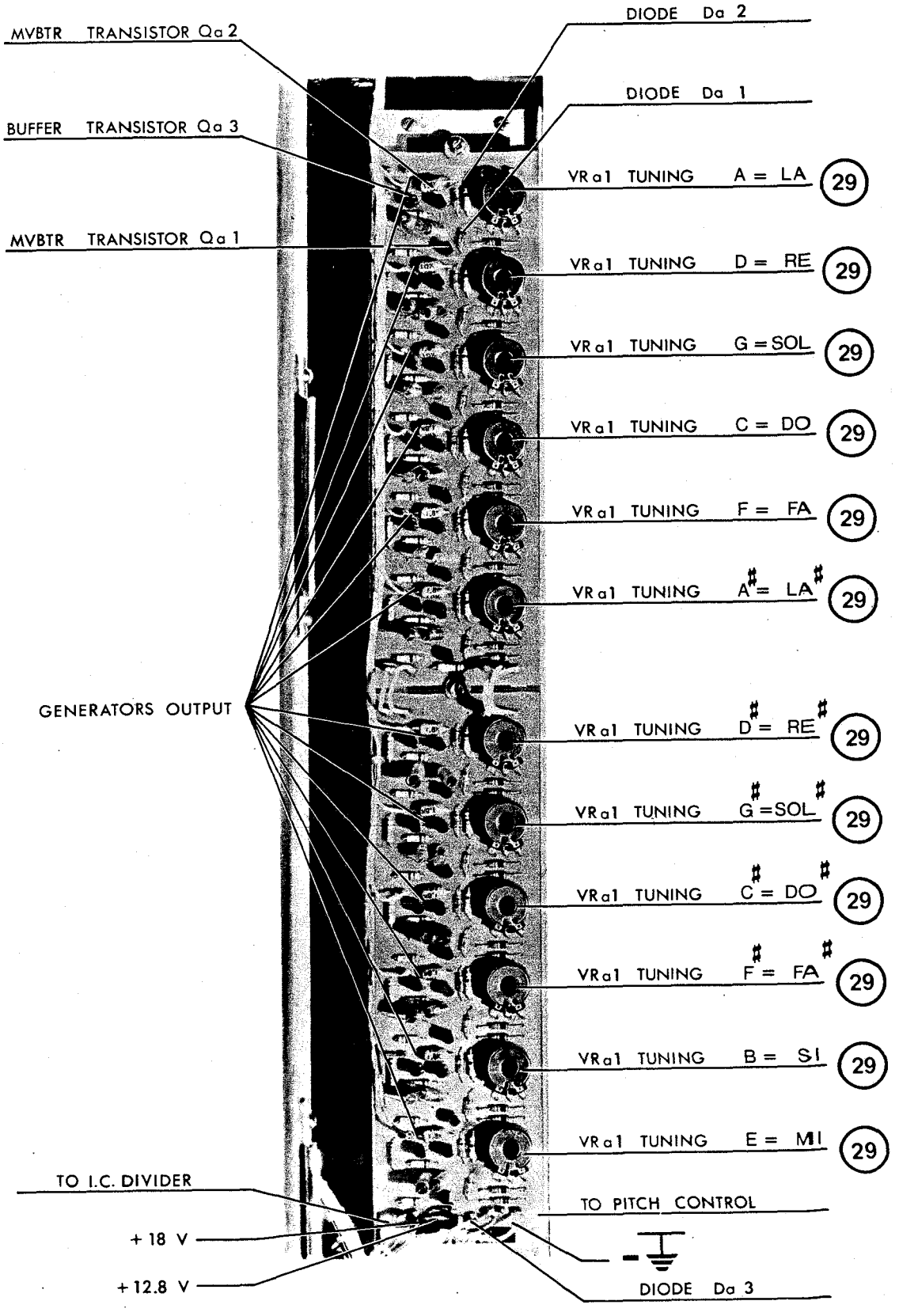


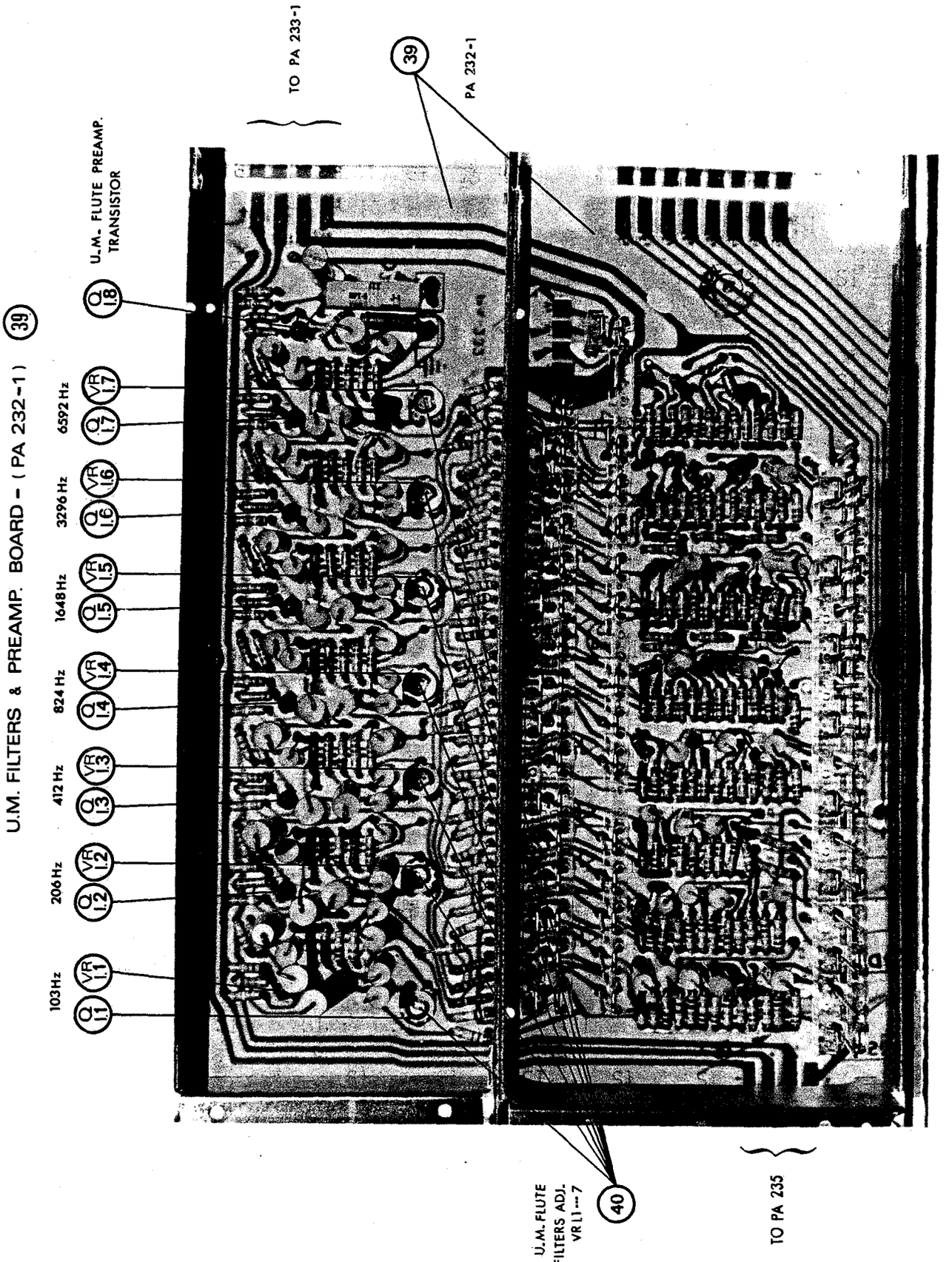
POWER SUPPLY CHASSIS (49)



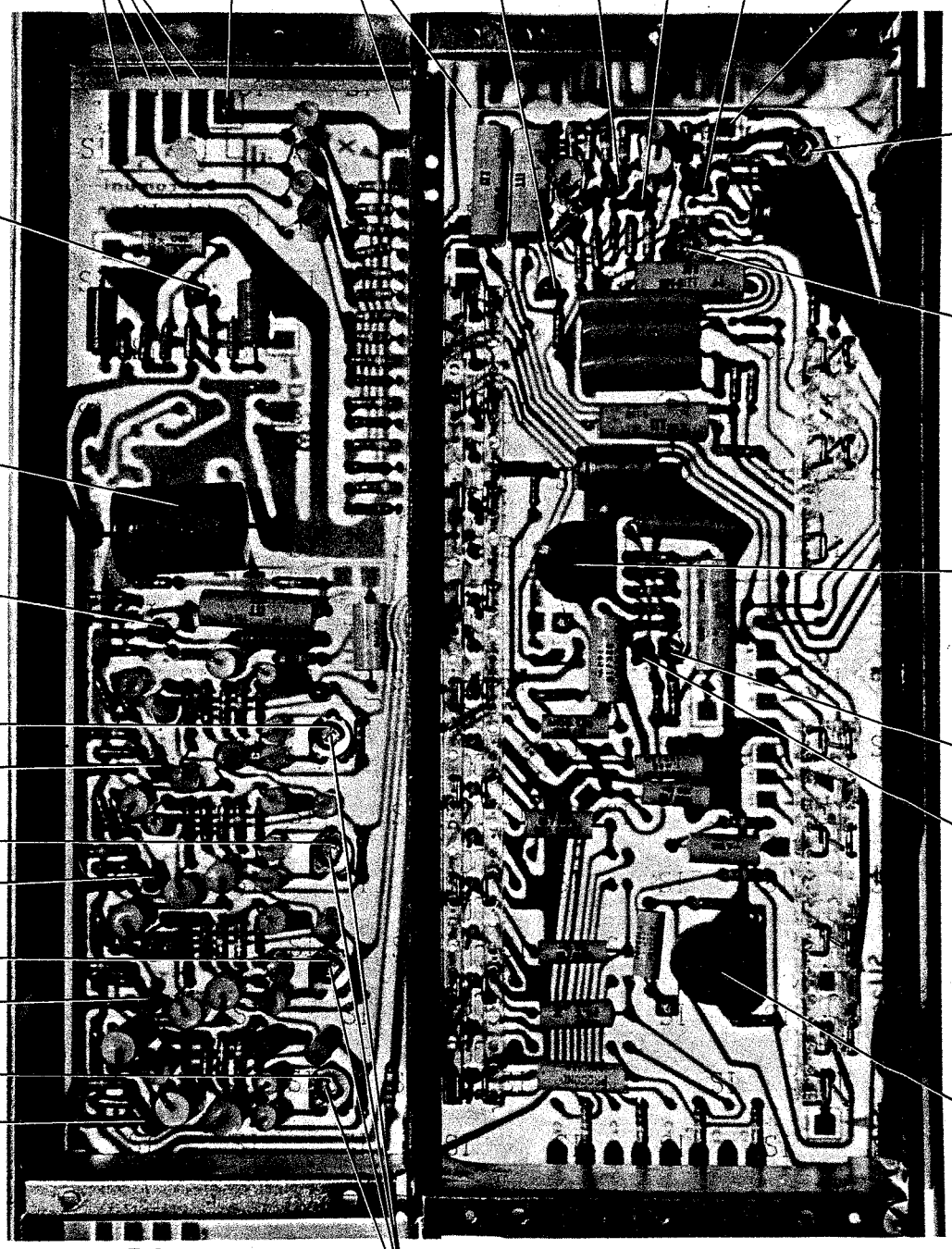

RECTIFIER BOARD = PA 237–2
REGULATOR BOARD = PA 238–1
(FOR EUROPE ONLY)
C d1
C d2
C d3
F 32
F 31 FUSES
RECTIFIER DIODES Dd1 ÷ Dd4
DZ d1 ZENER DIODE
D d5 RECTIFIER
Q e2
C e1
+12,8 VOLTAGE ADJ. VR e1
+5,6 VOLTAGE ADJ. VR e2
C e2
Q e1
D e1
R e8 WIRE WOUND RESISTOR
D e2
DZ e1 ZENER DIODE
DZ e2 ZENER DIODE

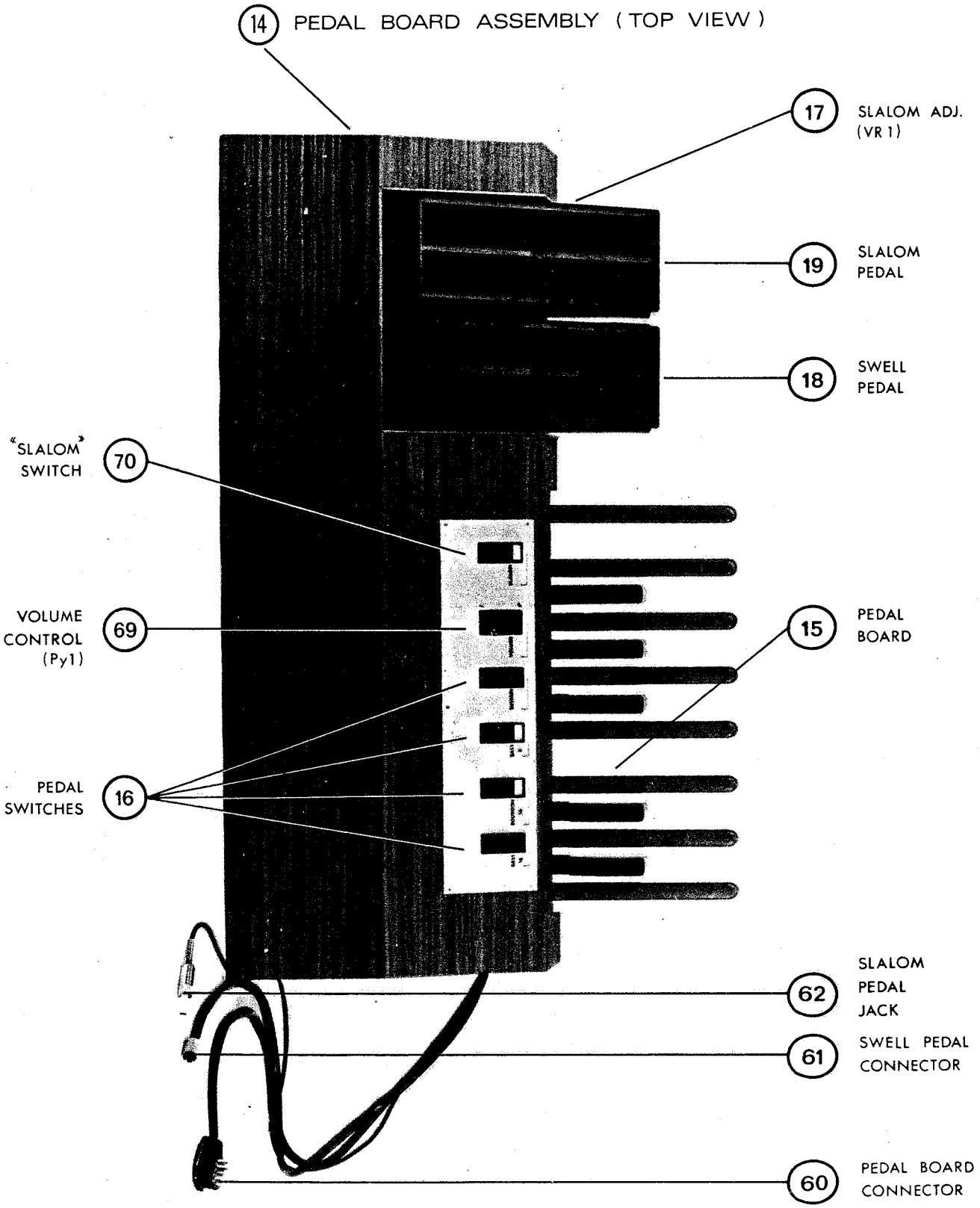
TONE GENERATOR BOARD (PA 234-1) (28)



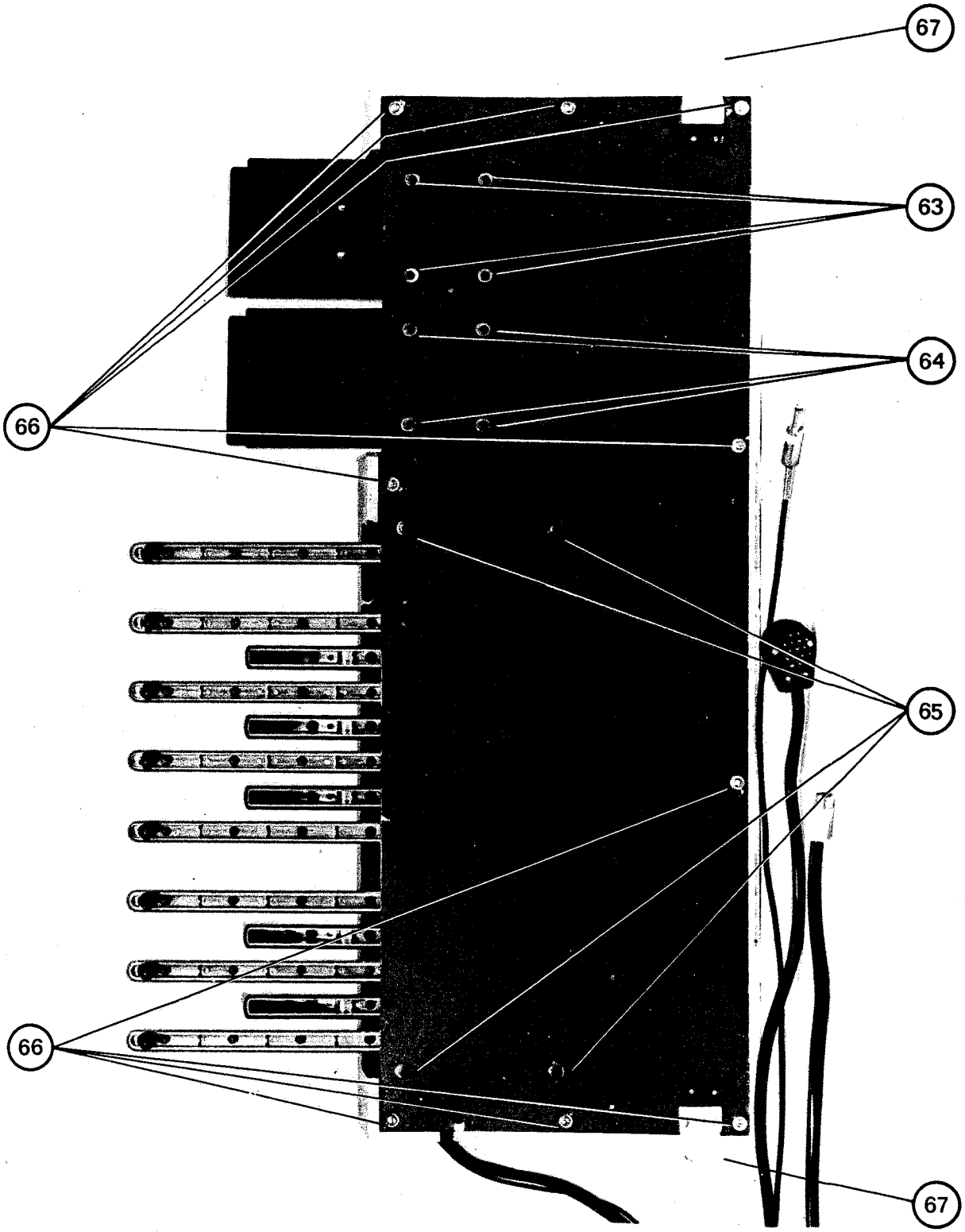

U.M. FILTERS & PREAMP. BOARD - (PA 232-1) (39)
TO PA 233-1
39
PA 232-1
U.M. FLUTE PREAMP. TRANSISTOR
Q 1.8
103 Hz
Q 1.1
VR 1.1
206 Hz
Q 1.2
VR 1.2
412 Hz
Q 1.3
VR 1.3
824 Hz
Q 1.4
VR 1.4
1648 Hz
Q 1.5
VR 1.5
3296 Hz
Q 1.6
VR 1.6
6592 Hz
Q 1.7
VR 1.7
U.M. FLUTE FILTERS ADJ. VR 1.1 --- 7
40
TO PA 235

SUSTAIN, FILTERS, U.M. VIBRATO & PREAMP. BOARD – (PA 233-1) (35)

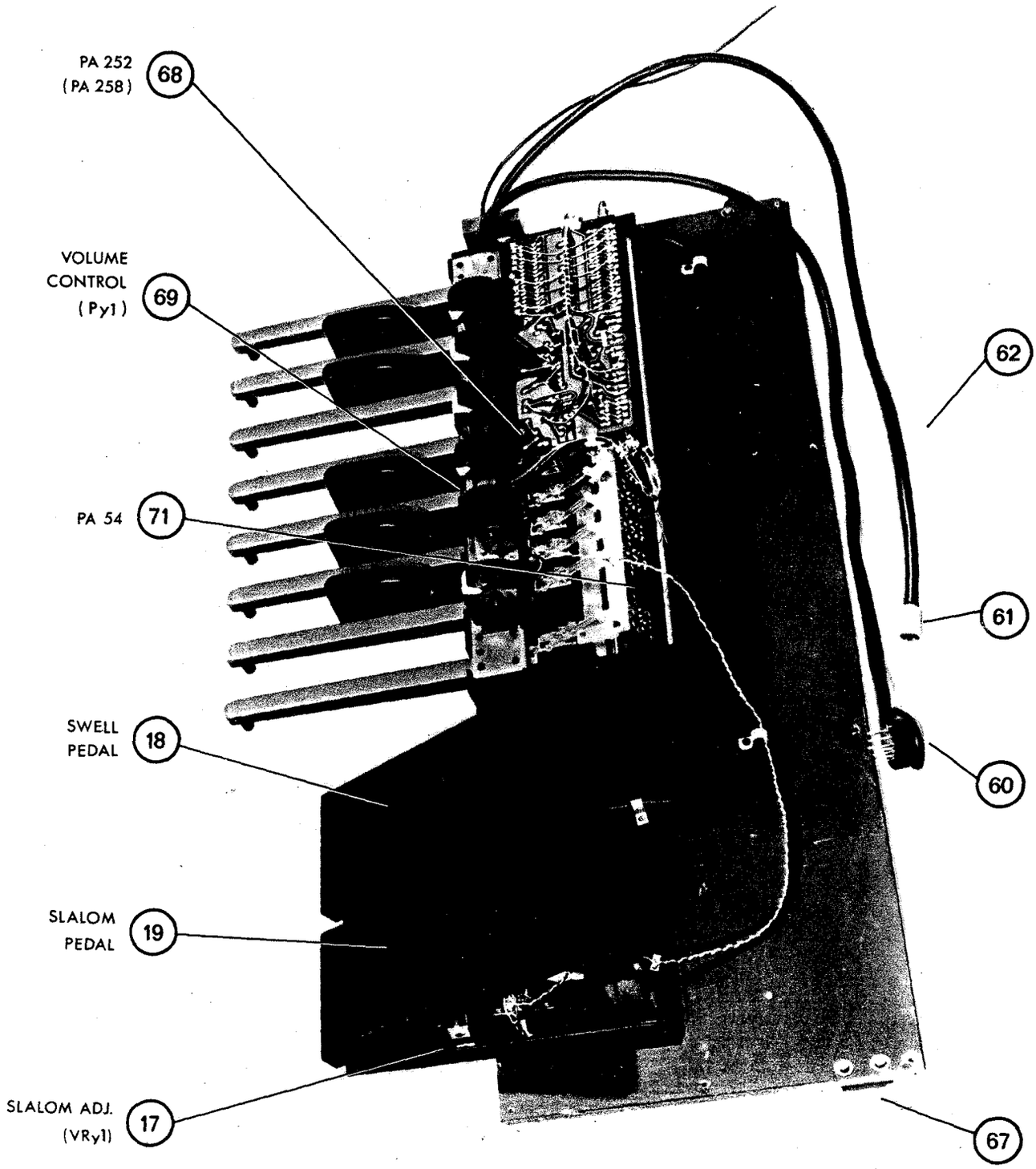



14 PEDAL BOARD ASSEMBLY (TOP VIEW)
17 SLALOM ADJ. (VR 1)
19 SLALOM PEDAL
18 SWELL PEDAL
"SLALOM" SWITCH 70
VOLUME CONTROL (Py1) 69
PEDAL SWITCHES 16
15 PEDAL BOARD
62 SLALOM PEDAL JACK
61 SWELL PEDAL CONNECTOR
60 PEDAL BOARD CONNECTOR

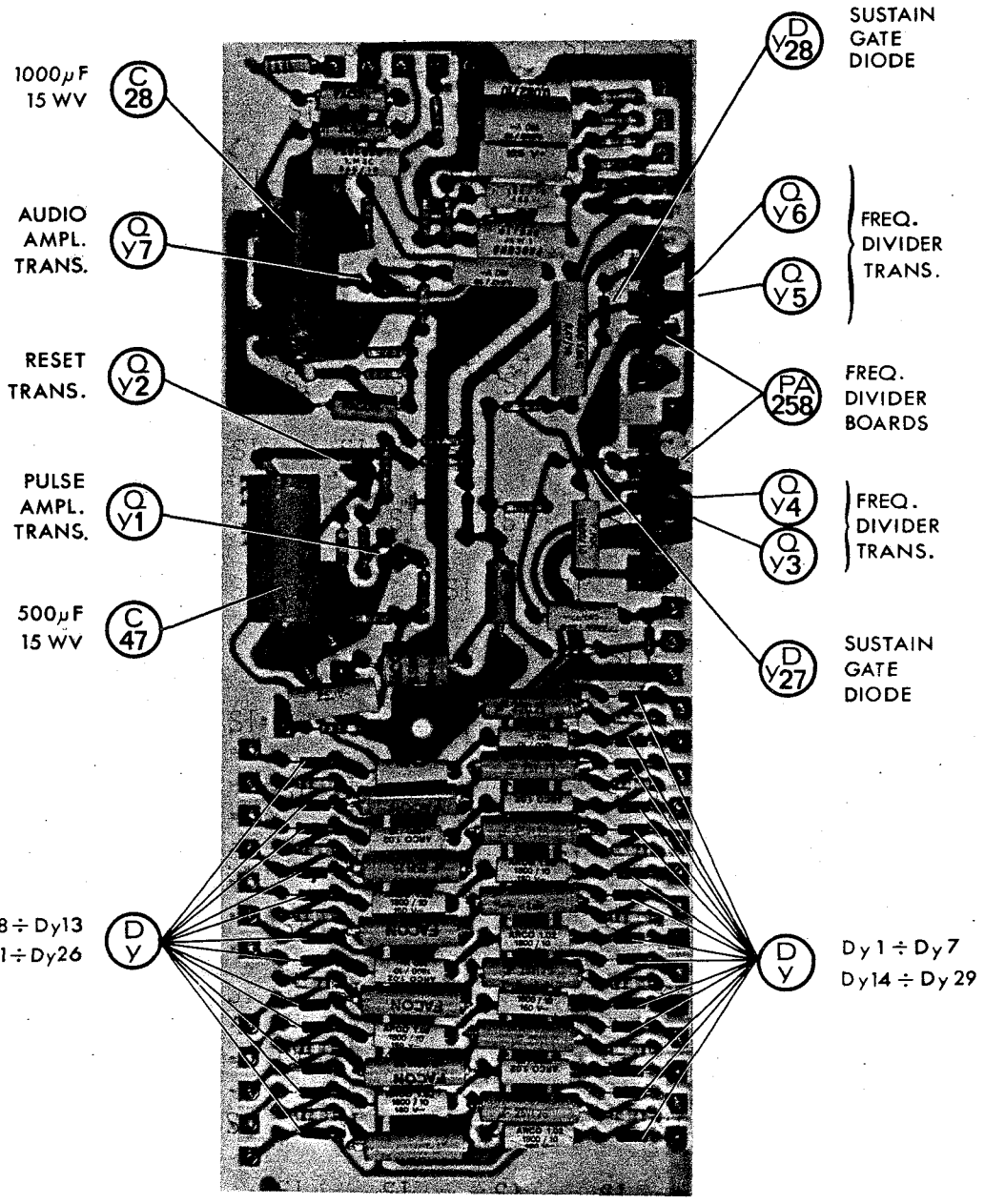
PEDAL BOARD ASSEMBLY (Bottom view)



PEDAL BOARD ASSEMBLY (Inside view)



PEDAL BOARD ASSEMBLY
FILTERS, SUSTAIN BOARD (PA 252) (68)



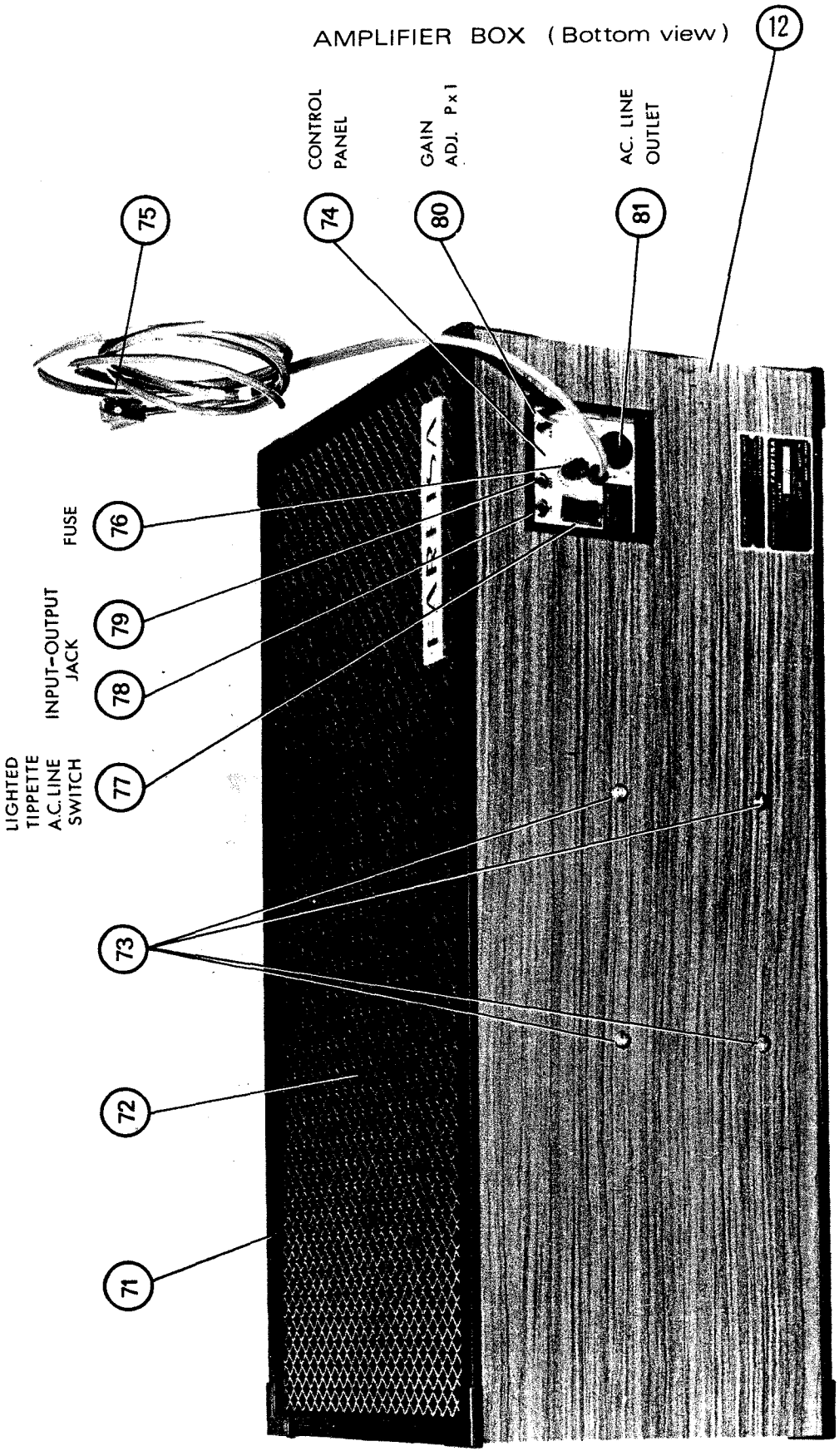
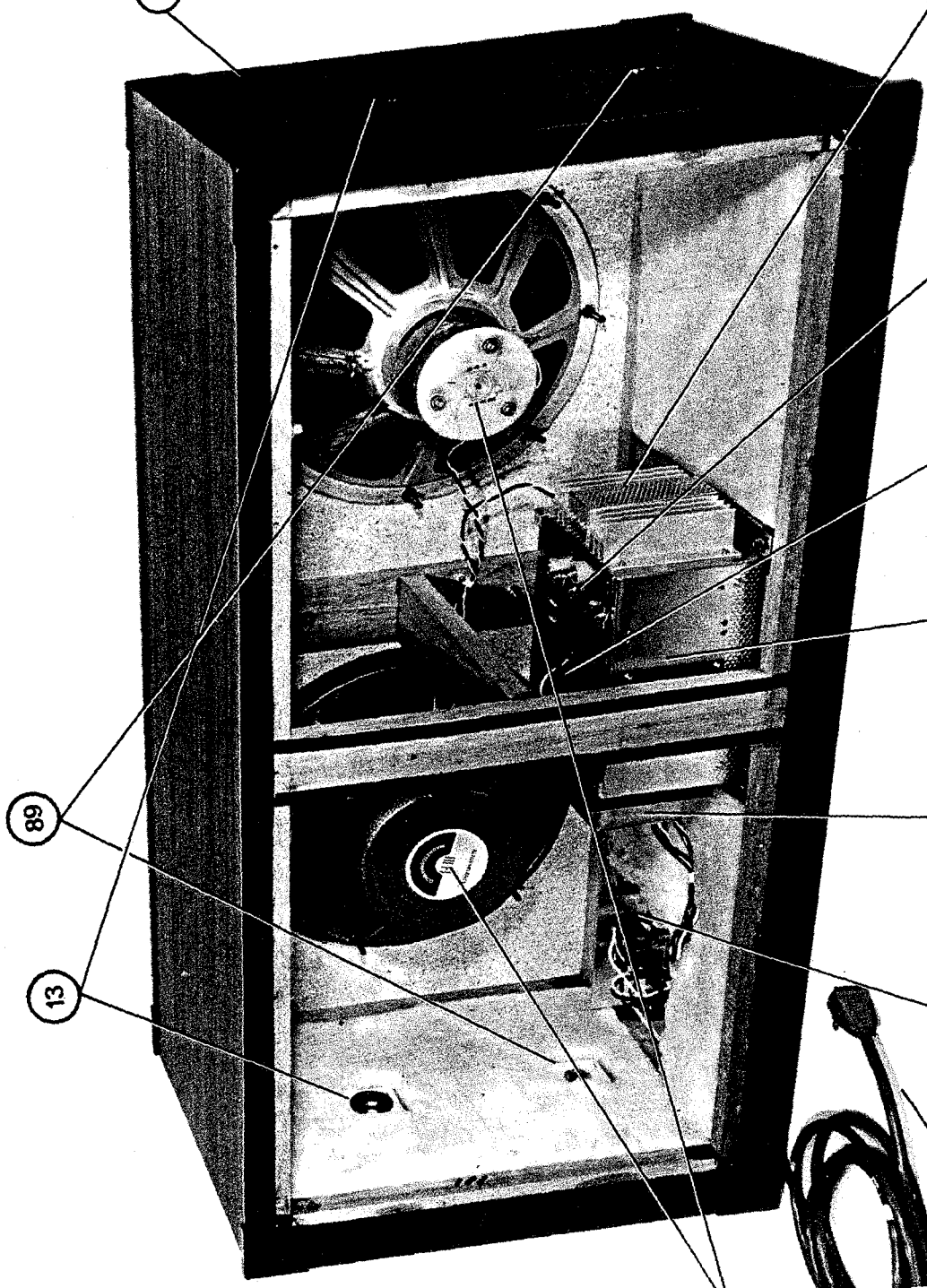

AMPLIFIER BOX (Bottom view)
12
CONTROL PANEL
74
GAIN ADJ. P x 1
80
AC. LINE OUTLET
81
75
FUSE
76
INPUT-OUTPUT JACK
79
78
LIGHTED TIPPETTE A.C. LINE SWITCH
77
73
72
71

FIG. **B-2**

12 AMPLIFIER BOX (Back view with cover removed)



85 OUTPUT POWER TRANS.

86 PA 212-6

87 POWER AMPLIFIER CHASSIS (cover removed)

83

84 POWER TRANSFORMER

74 CONTROL (cover removed) PANEL

75

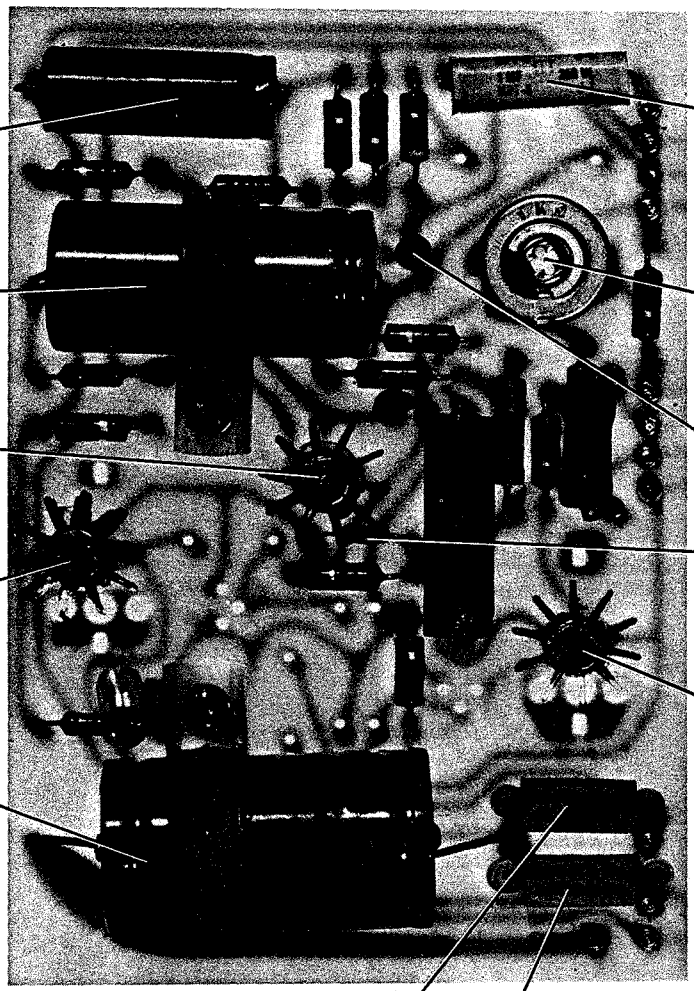
89

13

SPEAKERS 82

AMPLIFIER BOX

AMPLIFIER BOARD (PA 212-6) (86)



PARTS INFORMATION

STANDARD PARTS

Replacements for all standard electronic parts and hardware can be purchased directly from local suppliers generally in less time than would be required to obtain them from the factory.

SPECIAL PARTS

In addition to the standard replacement parts, special electronic parts and mechanical parts are also used. These parts are manufactured by and to the specifications of the factory. Order these parts directly from the factory since they would be difficult or impossible to obtain from other sources.

PARTS ORDERING INFORMATION

When ordering parts be sure to include the following information:

1. Model and Serial Number.
2. Part Code
3. A description of the Part.
4. Specify how you want the part shipped.

Most special electronic parts and mechanical parts will have a part number stamped on them. In the event that the part number is missing, or you are unable to read the part number, a complete description of the part and where it is used will allow the factory to fill your parts order.
When parts are ordered in the proper manner the factory is able to fill your orders promptly, delays that might result are avoided.

PARTS LIST

THE PARTS LIST contains the following information:

1. Name of Part.
2. Brief Description.
3. Where the Part is found (figure, number).
4. Schematic reference.
5. PART CODE.

The parts list includes all standard stock replacement parts. No attempt has been made to include every nut, bolt, screw, resistor, and capacitor.
If the necessity for a non-listed part arises, please write describing the parts location and function as well as model and serial number of the unit.

IMPORTANT ! In any correspondance concerning this instrument ALWAYS INCLUDE MODEL AND SERIAL NUMBERS.

Part	Description	(No) & Fig.	Schem.Ref.	Part Code
C O N S O L E A S S E M B L Y				
Cabinet	Complete Case.....	(1) 1-2	.....	* 2500/609
Lid	Cabinet Case Cover.....	" " "	.....	* 2510/609
Handle	Cabinet carryng Handle.....	" " "	.....	MG 4
Leg	Cabinet left.....	(11) 1-2	.....	* 2526/609
Leg	Cabinet right.....	" " "	.....	" 2525/609
Music Stand, complete	.....	(3) " "	.....	* 2519/609
Panel	Cabinet Bottom.....	(53) 9	.....	* 2516/609
Cover	Register top.....	(4) 1-2-3...	.....	* 2001/609
End-Block	Left or right side.....	(23) 3	.....	* PL 361
Support	Less fastening bracket.....	(90) 1bis...	.....	* 2040/609
Screw	Thumb-screw for legs.....	(2) 1-2-9-10.	.....	* PM 33
Knob	Box or bracket fastening.....	(13) 1-1bis-2	.....	* MP 25
Lamp	Neon, Pilot Light.....	(8) 1-3	.....	S 37
Cord	A.C. Power (USA).....	(55) 9-10...	.....	K 191
"	" " (Canada).....	" " "...	.....	K 38
"	" " (EUR).....	" " "...	.....	K 27
Switch	A.C. On/Off(USA).....	(7) 1-3 ...	.....	X 79
"	" " (Canada).....	" " " ...	.....	X 29
"	" " (EUR).....	" " " ...	.....	X 27
Fuse	Slo-Blo 2/10 A for USA-CANADA (117V)	(57) 9-10...	F o. 1.....	F/60
"	" " 100 mA for EUROPE (230 V)..	" " " ...	F o. 1.....	F 10
Holder	Fuse for USA-CANADA.....	" " " ...	.....	S 34
"	" " EUROPE.....	" " " ...	.....	S 29 A
Receptacle	Switched A.C. Outlet (USA).....	" " ...	.....	I 77
"	" " " " (EUR).....	" " ...	.....	I 78
Socket	Swell Pedal (5 pins female).....	(61) 9-10...	.....	I 67
Plug	Swell Pedal (5 pins male).....	" 18-19...	.....	I 108
Socket	Pedal Board (16 pins female).....	(60) 9-10...	.....	I 15
Plug	Pedal Board (16 pins male).....	" 18-19...	.....	I 14
Jack	Headphone.....	9-10...	.....	RRSS/7
"	Auxiliary output	9-10...	.....	I 103
"	Slalom Pedal.....	(62) " "...	.....	I 103
Jack-plug	Slalom Pedal (male).....	" 18-19...	.....	RRSS/26
" "	Organ main output cable (male).....	9-10...	.....	RRSS/25
Connector	(10 pins female) AMP.....	11 ...	.....	* I 119
"	(10 pins male) AMP.....	11 ...	.....	* I 118
Trimmer	Pot. Wire wound 36 ohm Pitch adj...	10 ...	VR o.1.....	P 204
"	" 1000 ohm Organ out. Level adj..	" ...	VR o.2.....	P 36
"	" 1000 " Auxil. " " " ..	" ...	VR o.3.....	P 36

Part	Description	(No) & Fig.	Schem.Ref.	Part Code
U.M. & L.M. KEYSWITCH ASSEMBLY		(47-51)7-10		
Keys	L.M. Octave,Natural,C Through B,White.....	.....	.....	TS 227-233B
Key	L.M. Top C, Natural White	.....	.....	TS 238-B
Keys	L.M. & U.M., Sharps, black	.....	.....	TS 142-N
"	U.M. Octave,Natural,C Through B,White.....	.....	.....	TS 195-201-B
Key	U.M. Top C, Natural White	.....	.....	TS 206-B
Spring	Natural Keys balance (L.M.-U.M.).	.....	.....	ML 291
"	Sharp Keys balance " " .	.....	.....	ML 290
Board	PA 228 L.M. Keyswitches	(51) 10	PA 228	* 6357-609
"	PA 260-4 Sustain Module.....	(50) 7-8	PA 260-4	* 6381-609
"	PA 109-1 U.M. Keyswitches	(46) 7	PA 109-1	* 6356-609
Actuator	Keyswitch, plastic, L.M.	.....	.....	PS 1124
"	Keyswitch, plastic, U.M.	.....	.....	PS 826
Spring	L.M.-U.M. Key contact (coiled) ..	.....	.....	ML 277
"	L.M. Key contact	.....	.....	ML 296
"	U.M. " " (core).....	.....	.....	ML 270
TABSWITCH ASSEMBLY		(25)4-6-8		
Actuator	Tabswitch (White Plastic)	.....	.....	PS 841
Spring	Tab contact.....	.....	.....	ML 296
Tab	Yellow	.....	.....	TS 225-1
"	Dark Green	.....	.....	TS 225-4
"	Light Green	.....	.....	TS 225-3
"	Orange.....	.....	.....	TS 225-2
"	Blue.....	.....	.....	TS 225-5
"	Grey.....	.....	.....	TS 225-11
Potentiometer	Slide Volume Balance 25 Kohm Ruwido.....		P o.1+P o.5	P 144
Knob	Volume slider Yellow	.....	.....	TS 239-4
"	" " Orange	.....	.....	TS 239-5
"	" " Dark Green	.....	.....	TS 239-7
"	" " Light Green	.....	.....	TS 239-6
"	" " Grey	.....	.....	TS 239-10
Switch	Percussion Duration (3 position).	.....	.....	X 52
Tab	" " (3 position).	.....	.....	TS 226
Switch	" Squelch (Micro).....	.....	.....	X 65
Spring	Microswitch balance	.....	.....	ML 292
Bar	Microswitch activated	.....	.....	BR 480-481
U.M. FILTER, MIXER & PREAMPLIFIER				
Board	PA 232-1 complete	(39)5-16	PA 232-1	* 6358-609
Capacitor	5 uF 6 V (electrolytic).....	" " "	Cl. 88	C/8-C/95
"	1 µF 12 V "	" " "	Cl. 40	C 50
"	1 µF 125 W (plastic metalized)....	" " "	Cl 89	C 157
Trimmer	Pot. 22 Kohm Filters adj.....	" " "	VR 1 1...7	P 24

Part	Description	(No) & Fig.	Schem.Ref.	Part Code
SUSTAIN, FILTERS, U.M. VIBRATO & PREAMPLIFIER				
Board	PA 233-1 complete.....	(35)5-17	PA 233-1	* 6359/609
Capacitor	Electrolytic 5µF - 6 V	" " "	C i 49	C/8 - C/95
"	" 25µF - 6 V	" " "	C i 68-69	C 68- C 1013
"	" 50µF - 6 V	" " "	C i 9	C 81 C 3
"	" 200µF - 6 V	" " "	C i 56	C 1004
"	" 500µF - 6 V	" " "	C i 71	C 1015
"	" 1000µF -12 V.....	" " "	C i 70	C 1041
Trimmer	Pot.22 K Filters adj.....	(36)5-17	VR i.1÷4	P 24
"	" " " Vibrato BIAS adj.....	(37)5-17	VR i.6	P 24
"	Pot.47 K " Depth adj.....	(38)5-17	VR i.5	P 34
Coils	410 mH Filter.....	17	Ti 1-2	T 4014
PERCUSSION, L.M. FILTERS & PREAMPLIFIER				
Board	PA 235 complete.....	(41)5-15	PA 235	* 6360/609
Capacitor	Electrolytic 1µF 12 V.....		C h.36	C 50
"	" 50µF 6 V.....		C h.35	C 3
Trimmer	Pot. 10 K Percussion Bias Adj..	(44)6-15	VR h.9	P 15
"	" 22 K Filter adj.....	(42)5-15	VR h.1÷7	P 24
"	470 ohm Percussion Shape Adj...	(43)6-15	VR h.8	P 35
L.M. VIBRATO				
Board	PA 262 Complete.....	(32)5-14	PA 262	* 6363/609
Trimmer	Pot 47 K Bias Adj.....	(34)" "	VR c.1	P 34
"	" 100 K Depth Adj.....	(33)" "	VR c.2	P 23
TONE GENERATOR ASSEMBLY				
Board	PA 234-1 Generators complete... (A,D,G,C,F,As)	(28)5-13	PA 234-1	* 6020/609-A
Board	PA 234-1 Generators complete... (Ds-Gs-Cs-Fs-B-E)	" " "	" " "	* 6020/609 Ds
Trimmer	Pot. 2.2 K Tuning.....	(29)" "	VR a.1	P 6
OUTPUT AMPLIFIERS				
Board	PA 236 Main Output amplifier...	(30)5-14	PA 236	* 6361/609
"	PA 236-1 L.M. Output Amplif....	(31)" "	PA 236-1	* 6362/609
Capacitor	Electrolytic 2,5 µF - 16 V.....	14	Cf.2-Cg.6	C 49
"	" 10 µF - 12 V.....	"	Cf.6-Cg.9	C 1007-8
"	" 25 µF - 12 V.....	"	Cf.3-Cg.7	C 1010-12
"	" 100 µF - 25 V.....	"	Cf.7-Cg.10	C 58-93

Part	Description	(No)& Fig.	Schem.Ref.	Part Code
OUTPUT AMPLIFIERS				
Capacitor	Electrolytic 1000µF - 25 V.....	14	C f.9	C 1041
"	" 2000µF - 25 V.....	"	C f.8-C g.11	C 43 - 1049
"	Plastic 220 K pF 200 V	"	C f.1-C g.5	C 639
"	Plast.metalized 1µF 250 V.....	"	C o.1-2 C g4	C 157
"	Ceramic 10 pF - 500 V	"	C f.4-C g.8	C 413
POWER SUPPLY CHASSIS				
Assembly	Power supply Chassis complete...	(49)10-11		* 8000/609
Board	PA 237-2 Rectifier, complete.....	11-12	PA 237-2	* 6377/609
"	PA 238-1 Regulator, complete.....	" "	PA 238	* 6355/609
Capacitor	Electrolytic 1000 µF 25 V.....	" "	C d.3	C 1041
"	" " " " 40 V.....	" "	C d.2-C e.2	C 1063-66
"	" " " " 50 V.....	" "	C d.1	C 94
"	" 200 µF 15 V.....	" "	C e.1	C 1044-54
Connector	Male10 pins AMP "MATE-N-LOK".....	11		I 118
Fuse	Slo-Blo 1 A - 5x20 (only Europe)..	12	F 32	F 6
"	" " 50mA " " " " ..	12	F 31	F 13
Resitor	1,8 ohm 5 W Wire wound.....	11	R o.2	R 3030
"	15 " " " " "	11	R o.3	R 3052
"	100 ohm 10W " "	11	R o.4	R 4072
"	560 ohm 5 W " "	11-12	R e.8	R 612
Trimmer	Pot. 470 ohm	11-12	VR e.2	P 26
"	" 1 Kohm Wire wound.....	11-12	VR e.1	P 147
Trasformer	Power T 1068-1.....	11	T 1068-1	T 1068-1
PEDALBOARD - SWELL PEDAL - SLALOM PEDAL ASSEMBLY		(14)1-18		
Actuator	Keyswitch, Plastic.....			PS 711
Board	PA 54 - Pedal Keyswitches.....	(70)20	PA 54	* 9011/607
"	PA 252 - complete with PA 258.....	(68)20-21	PA 252	* 6330/607
Board	PA 258 Divider	(68)" "	PA 258	* 6133/154
Connector	16 pins plug (male)(Hirschmann)..	(60)18-19		I 14
Foot	Pedal Key feet		.....	PD 39
Key	Natural pedal, brown plastic.....		.....	TS 223
Key	Sparp pedal, black plastic.....		.....	TS 224
Lever	Natural Pedal, metal.....		.....	CL 191
"	Sharps pedal, metal.....		.....	CL 192
Knobs	Microswitch control and registers		.....	TS 258
"	Potentiometer Volume control.....	(69)18-20 .	.....	MP 23
Potentiometer	10 k Volume control.....	(69)" "	P y.1	P 197

Part	Description	(No) & Fig.	Schem.Ref.	Part Code
PEDALBOARD (cont'd)				
Plate	Decorative metal Plate.....	(16)1-18 .	.....	PL 362
Spring	Microswitch balance.....	.....	.....	ML 313
"	Natural Key balance.....	.....	.....	ML 262
"	Sharp key balance.....	.....	.....	ML 270
"	Pedal key contact (coil).....	.....	.....	ML 257
"	" " " (core).....	.....	.....	ML 258
Switch	Micro switch, (Bet 1501).....	.....	.....	X 65
SWELL PEDAL ASSEMBLY		(18)1-18		* 7000/609
Base	Bottom, plastic.....	.....	.....	BA 54
Cover	Top, plastic.....	.....	.....	CL 151
Lamp	Type 12 V - 3 W	.....	L 1 & L 2....	L 5
Lens	Photofilm plate	.....	.....	PS 655
Photoresistor	LDR Type B 8 731 03.....	.....	LDR 1 & 2....	H 1 - H 2
Plug	5 pins male.....	(61)18-19.	.....	I 108
Spring	Pedal balance	.....	.....	ML 185
"	Lamp socket center.....	.....	.....	ML 323
Support	LDR group, complete.....	.....	.....	SU 479
SLALOM PEDAL ASSEMBLY		(19)1-18		* 7000/633
Base	Bottom plastic		.....	BA 205
Cover	Top, plastic	(19)1-18	.....	CL 151
Jack-plug	Slalom output.....	(62)18-19-20	.....	RRSS/26
Potentiometer	5 K Log.(Allen Bradley "J")....	18-20	.....	P 151
Trimmer	Pot. 4700 ohm.....	(17)1-18-20	.....	P 37
Pinion	Potentiometer run		.....	C M 1
Rack	" "		.....	PG 2
AMPLIFIER BOX		(12)1-B1		
Strip	Brown plastic trimming (short).	B1	.....	DE 579
"	" " " (long)..	(71)B1	.....	DE 578
Corner	" " " (front).	B1	.....	DE 580
"	" " " (back)	B1	.....	DE 581
Trimming	" " (chassis housing)	B1	.....	DE 577
Cloth	Speaker grille	(72)B1	.....	RIV 27
Sign	Farfisa	B1	.....	NO 76

Part	Description	(No) & Fig.	Schem.Ref.	Part Code
AMPLIFIER BOX	(Cont'd)			
Cord	A.C. Power (USA).....	(75) B1	.....	K 191
"	" " " (CANADA).....	" "	.....	K 38
"	" " " (EUR.).....	" "	.....	K 27
Fuse	Slo-Blo 2 A-3AG (USA-CANADA=117V)	(76) B1	.....	F 59
"	" " 1 A-5x20 (EUR=220 V)....	(76) B1	.....	F 6
Fuse holder	USA - CANADA type.....	" "	.....	S 34
" "	EUROPE type.....	" "	.....	S 29 A
Switch	A.C. On/Off - USA CANADA.....	(77) B1	.....	X 80
"	" " EUROPE.....	" "	.....	X 44
Receptacle	A.C. Outlet - USA CANADA 117V...	(81) B1	.....	I 77
"	" " EUR 220 V.....	" "	.....	I 78
Jacks	Input-Output sockets.....	(78-79)B1	.....	RRSS/3
Trimmer	Pot. 10 K Gain adj.....	(80) B1	.....	P 49
Board	PA 212-6 Complete	(86)B2-B3	PA 212-6..	6196 A/163
Resistor	0,22 ohm 2 W wire wound.....	B3	R19-R20...	R 209
"	820 ohm - 2 W.....	B3	R 12.....	R 208
Trimmer	Pot. 1 K Bias Adj.....	B3	VR 1.....	P 147
Transformer	Power T 1054.....	B2	T 1.....	T 1054
Speaker	12 inch 7 ohm (Philips AD 5200).	(82)B2	.....	A 13
"	12 inch 10ohm ..... (Ciare - M.320.38.C Fx-HF)	B2	.....	A 14

Schem.Ref.	Circuit (No) & Fig.	Type	Part Code
PA 234-1	TONE GENERATOR (No 28) fig.5 - 13		
Q a.1	Master Oscillator.....	G.E. 2N 5172	W 126
Q a.2	Master Oscillator.....	G.E. 2N 5172	W 126
Q a.3	Buffer Amplifier.....	G.E. 2N 5172	W 126
D a.1	Base breakdown protection.....	SGS IX 9809	B 34
D a.2	Base breakdown protection.....	SGS IX 9809	B 34
D a.3	Threshold.....	IRCI 10D1 = 10D2 IRCI 10D4 = 5D1	B 50 - B 51 B 91 - B 92
PA 260-4	SUSTAIN MODULE (No 50) fig.7-8		
D b.1	Sustain gate.....	SGS IX 9809	B 34
PA 262	VIBRATO L.M. (No 32) fig.5 - 14		
Q c.1	L.M. Vibrato Driver.....	SGS IW 11711	W 112
Q c.2	L.M. Vibrato Modulator.....	SGS IW 11706	W 71
CHASSIS	POWER SUPPLY CHASSIS (No 49) Fig.10-11-12		
Q o.1	Series Stabilizer.....	SGS BD 117	W 84
PA 237-2	POWER SUPPLY CHASSIS (Rectifier board) Fig. 11 - 12		
D d.1+4	Rectifier Bridge.....	SGS IX 9809	B 34
D d.5	Rectifier Bridge.....	GIE B 35 C 800	Y 22
Dz d.1	Voltage Regulator.....	ITT STAND. ZF15	B 85
PA 238-1	POWER SUPPLY CHASSIS (Regulator board) Fig. 11 - 12		
Q e.1	Darlington transistor.....	SGS BC 143	W 63
Q e.2	Feedback amplifier.....	BC 107 A or B *BC 207 A or B 2N 5172	W 103 - W 104 W 108 - W 109 W 126
D e.1	Temperature compensator.....	SGS IX 9809	B 34
D e.2	Temperature compensator.....	SGS IX 9809	B 34

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Schem.Ref.	Circuit (No) & Fig.	Type	Part Code
PA 238-1	Cont'd		
Dz e.1	Voltage reference.....	MULLARD BZY88/C5V6 IRCI IN 708 ITT STANDARD ZF5,6	B 38 B 68 B 69
Dz e.2	+12 V drop.....	IRCI IZ 6,2 IRCI IZC 6,2 ITT STANDARD ZD6,2 MULLARD BZY 96C6V2	B 87 B 88 B 89 B 90
PA 246	MAIN OUTPUT (No 30)Fig. 4-14		
Q f.1	Input preamplifier.....	SGS IW 9640	W 89
Q f.2	Driver (NPN).....	GE 2N 5172	W 126
Q f.3	Output amplifier (NPN).....	BC 109 B or C *BC 209 B or C	W 98 - W 101 W 110- W 111
Q f.4	Output amplifier (PNP).....	SGS IW 11711	W 112
PA 236-1	L.M. OUTPUT (No 31) Fig. 5-14		
Q g.1	Input preamplifier.....	BC 109 B or C red dot BC 209 B or C red dot	W 143- W 145 W 148- W 150
Q g.2	Amplifier.....	SGS IW 9640	W 89
Q g.3	Driver NPN.....	GE 2N 5172	W 126
Q g.4	Output amplifier (NPN).....	BC 109 B or C BC 209 B or C	W 98 - W 101 W 110- W 111
Q g.5	Output amplifier (PNP).....	SGS IW 11711	W 112
D g.1	Pedalboard gate.....	SGS IX 9809	B 34
PA 235	L.M. FILTERS PERCUSSION (No 41) Fig. 5-15		
Q h.1÷7	Flute Filters.....	BC 109 B or C *BC 209 B or C	W 98 - W 101 W 110- W 111
Q h.8	Flute preamplifier.....	BC 109 B or C red dot *BC 209 B or C red dot	W 143- W 145 W 148- W 150
Q h.9	Flute preamplifier.....	BC 109 B or C blue dot *BC 209 B or C blue dot	W 144- W 146 W 149- W 151
Q h.10	Percussion modulator Gate Fet	SGS IW 11706	W 71
Q h.11	Percussion peramplifier.....	BC 109 B or C red dot *BC 209 B or C red dot	W 143- W 145 W 148- W 150

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Schem.Ref.	Circuit (No) & Fig.	Type	Part Code
PA 235	Cont'd		
Q h.12	Percussion preamplifier.....	BC 109 B or C red dot *BC 209 B or C red dot	W 143- W 145 W 148- W 150
Q h.13	Percussion multivibrator.....	GE 2N 5172	W 126
Q h.14	Percussion multivibrator.....	GE 2N 5172	W 126
Q h.15	Percussion Driver.....	SGS IW 11711	W 112
PA 233-1	SUSTAIN FILTERS VIBRATO (No 35) Fig. 5-17		
Q i.1	Clar.Sharp preampl.1°stage....	BC 109 B or C red dot *BC 209 B or C red dot	W 143- W 145 W 148- W 150
Q i.2	Clar.sharp preampl.2°stage....	BC 109 B or C blue dot *BC 209 B or C blue dot	W 144- W 146 W 149- W 151
Q i.3÷6	Sustain filters.....	BC 109 B or C ..... *BC 209 B or C	W 98 - W 101 W 110- W 111
Q i.7	Sustain preamplifier.....	BC 109 B or C red dot *BC 209 B or C red dot	W 143- W 145 W 148- W 150
Q i.8	Vibrato oscillator.....	GE 2N 5172	W 126
Q i.9	Vibrato Driver	BC 109 B or C red dot *BC 209 B or C red dot	W 143- W I45 W 148- W 150
Q i.10	Vibrato Modulator (FET).....	SGS IW 11706	W 71
Q i.11	Vibrato Preamplifier.....	BC 109 B or C red dot	W 143- W145
Q i.12	U.M. Preamplifier	*BC 209 B or C red dot	W 148- W150
PA 232-1	U.M. FILTERS (No 39) Fig. 5-16		
Q l.1÷7	Flute Filters;.....	BC 109 B or C ..... *BC 209 B or C	W 98- W 101 W 110- W 111
Q i.8	Flute Preamplifier	BC 109 B or C red dot *BC 209 B or C red dot	W 143- W 145 W 148- W 150
PA 228	L.M. CONTACT BOARD (No 51) Fig. 7-8		
D n.1÷10	Sustain "on"	SGS IX 9809	B 34
I.C.	Integrated Frequency divider	.....	W 127

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Schem.Ref.	Circuit	(No) & Fig.	Type	Part Code
PEDAL BOARD ASSEMBLY (No 14) Fig. 18-20-21				
PA 252 & PA 258 PRINTED CIRCUIT BOARDS (No 68) Fig. 20-21				
Q y.1	Pulse Amplifier		GE 2N 5172	W 126
Q y.2	Reset		SGS BC116 = BC 154	W 80- W112- W154
Q y.3 Q y.4 Q y.5 Q y.6	Freq. Divider		GE 2N 5172	W 126
Q y.7	Audio Amplifier.....		BC 109 B or C ..... *BC 209 B or C	W 98- W 101 W 110-W 111
D y.1 ÷ 13	Memory Gate		SGS IX 9809	B 34
D y14 ÷ 26	Reset		SGS IX 9809	B 34
D y27 ÷ 28	Sustain Gate		SGS IX 9809	B 34
AMPLIFIER BOX (No 12) Fig. B1-B2-B3				
PA 212-6	**PRINTED CIRCUIT BOARD and CHASSIS (No 85-86) Fig. B2-B3**			
Q 1	Input Preamplifier.....		SGS IW 9640	W 89
Q 2	Driver Amplifier		SGS BF 156	W 60
Q 3	Temperature Compensator		BC 107 A or B	W 103- W 104
Q 4	Driver		SGS BC 143	W 65
Q 5	Driver		SGS BC 142	W 64
Q 6	Power Transistor		2N 3055	W 51-W 120-W 125
Q 7	Power Transistor		2N 3055	W 51-W 120-W 125
D 1	Compensator		SGS IX 9809	B 34

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